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ARTHROPODS OF MEDICAL IMPORTANCE IN ASIA
(AND THE EUROPEAN USSR)

Part II of Two Parts, Printed Separately

by

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**ARTHROPODS OF MEDICAL IMPORTANCE IN ASIA
(AND THE EUROPEAN USSR)**

PART II

Data on Arthropods other than Mosquitoes

**[Part I, published separately, contains
Introductory and Explanatory Material
and Data on Mosquitoes]**

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INDEX OF COUNTRIES

In 1962 a world-wide Geographic Index was published* listing all countries or major regions in alphabetical order, and assigning a number to each. The following list consolidates the countries of Asia from that Index and makes a few additions to it. The countries, as named at the time of publication of the present report, are shown on the adjacent map. Major islands and important political units having less than country status are also identified on the map and in the following list.

All the numbers of Asian countries, and areas in Europe controlled by the Soviet Union, are listed in order. All entries in this report use these numbers instead of country or regional names. For example, when number 3 is entered, it stands for Afghanistan; 59 stands for Burma. Where the authors have not recorded a specific country, an inclusive title is entered, e.g., 31 for Asia. This is the principal purpose of the Index: to identify the countries represented by numbers under DISTRIBUTION (Table 1) or COUNTRY (Table 2).

The Index also includes at least the major synonyms. The synonymy is preceded by a dash, the numbers appearing with the main entries. For example, the number 150 identifies Iran, but in alphabetical order among the P's is the synonym "-Persia or Iran, 150".

All countries in the 1962 Index are listed and cross-referenced through "332. Yemen" (the last number). The addenda to the original Geographic Index start with number 337. The numerical order is maintained in the addenda, but not the alphabetical order. However, entries from the addenda are cross-referenced alphabetically in the main list. For example, in the main list we have "-Middle East (Inclusive title), 340."

*B. V. Travis, Herbert H. Casewell, Jr., William B. Rowan, Helle Starcke, and Carl W. Ross: Classification and coding system for compilations from the world literature on insects and other arthropods that affect the health and comfort of man, Technical Report ES-4, Quartermaster Research & Engineering Center, Natick, Massachusetts, 1962, 259 pp.

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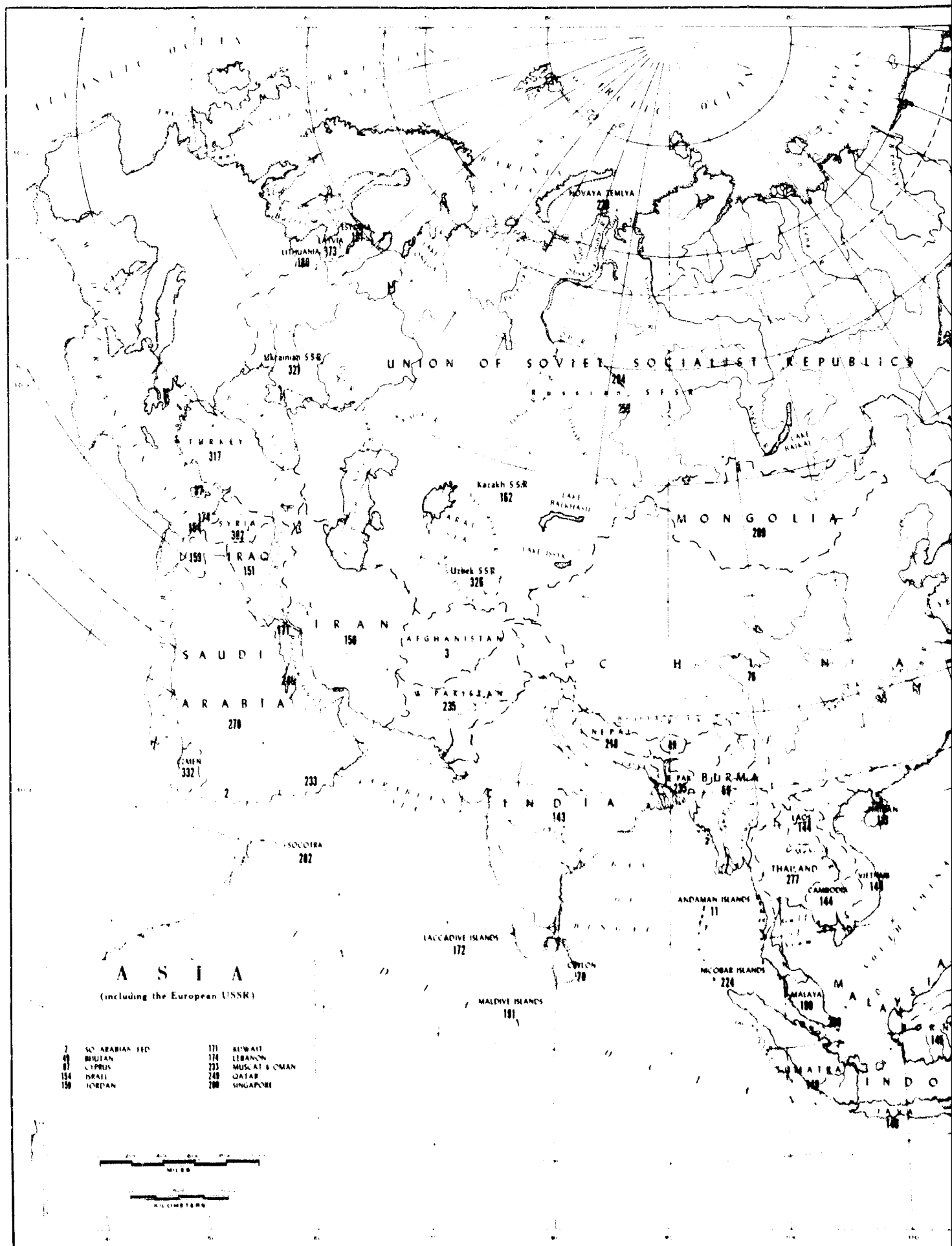
- Vietnam, indexed with Indochina, 144
- Volcano Islands, indexed with Ogasawara Gunto, 232
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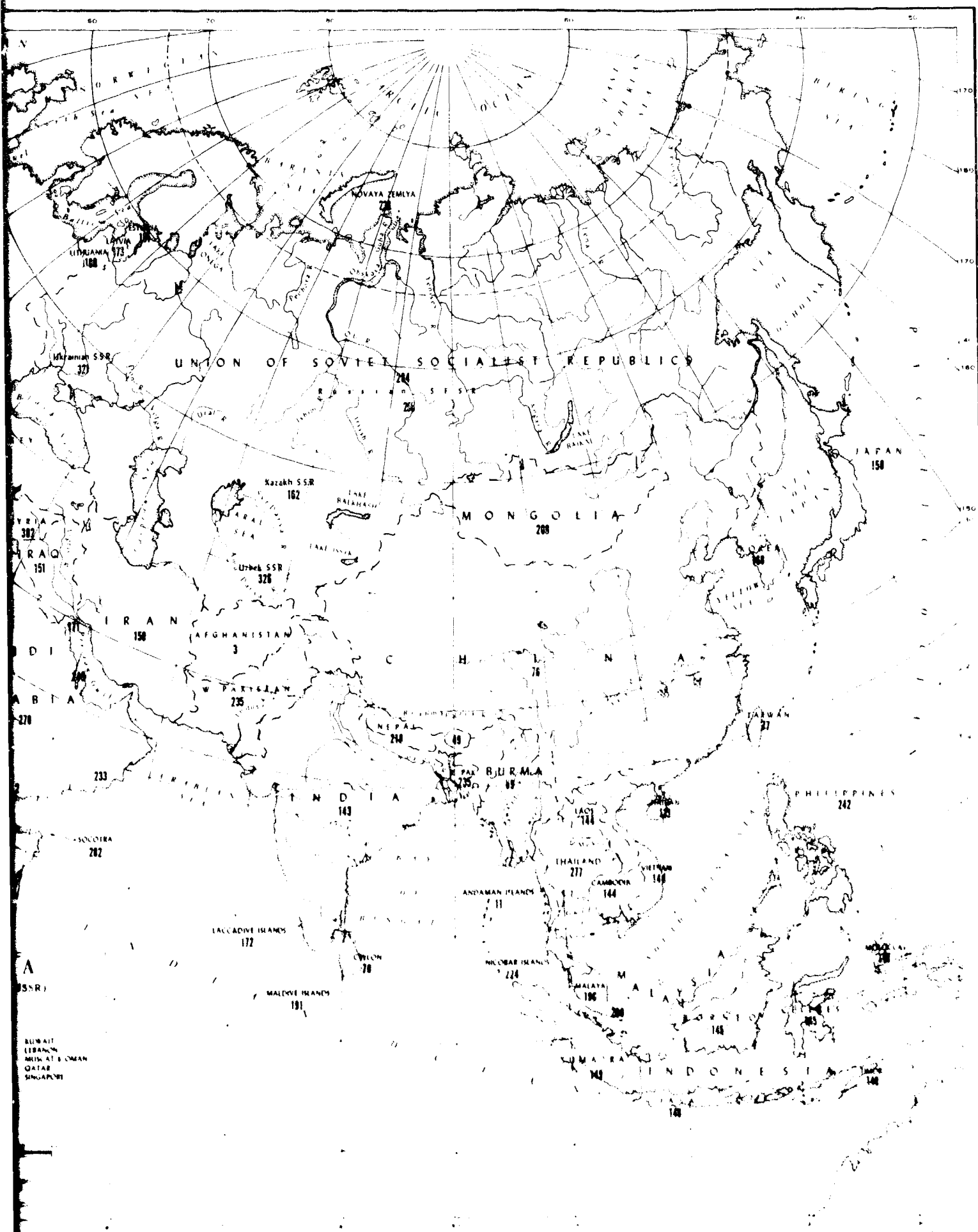
332. Yemen

* * * * *

ADDENDA:

- 337. East Indies or Indonesia (Inclusive title)
- 339. South Japan Islands (Inclusive title)
- 340. Middle East (Inclusive title)
- 342. Palestine (formerly), now includes Israel, 154 and Jordan, 159 (in part)
- 345. Transcaucasia or Caucasus (Inclusive title)
- 349. Portuguese India (formerly) (Inclusive title)
- 350. Asia Minor (Inclusive title)
- 353. Mongolia (Inclusive title)
- 354. Transcaspia (Inclusive title)
- 366. Bengal (Inclusive title)





RUSSIA
LIBANON
MILITARY
QATAR
SINGAPORE

B. BLACK FLIES

The black fly entries include little on biology. No disease transmission was recorded. Most of the recorded information is on distribution. In the table are listed 228 species or subspecies.

TABLE 1 - BLACK FLIES

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|--|-----------------------|------|
| <i>ASTEGA</i> <i>lanata</i> Takahasi | ---; ---; 194 | Takahasi | 1940 |
| <i>BOOPHTHORA</i> <i>erythrocephala</i> (De Geer) | ---; ---; 60°, 162, 294. Forest streams, seldom in rivers; ---; 256° | Ussova | 1961 |
| <i>BYSSODON</i> <i>transiens</i> (Rubtsov) | Fast rivers with rocks and vegetation; June-July; 256 | Ussova | 1961 |
| <i>CNEPHIA</i> <i>kariyai</i> Takahasi | ---; ---; 194 | Barnett & Toshioka | 1951 |
| <i>lanta</i> Takahasi | ---; ---; 194 | Barnett & Toshioka | 1951 |
| <i>lapponica</i> (Enderlein) | ---; ---; 30. On rock face of fast flowing rivers; May and June; 256. ---; April; 321 | Ussova | 1961 |
| <i>pallipes</i> (Fries) | Mountain and foothill rivers with rocky bottom; ---; 256 | Ussova | 1961 |
| <i>trigonia</i> (Lundström) | ---; ---; 256 | Ussova | 1961 |
| <i>EUSIMULIUM</i> <i>angustitarse</i> (Lundström) | ---; ---; 256, 294 | Ussova | 1961 |
| <i>annuum</i> (Lundström) | Fast cold rivers with rocks and water plants; ---; 256 | Ussova | 1961 |
| <i>aureum</i> Fries | Slow and clean warm waters, sometimes dirty streams; ---; 72, 256 | Ussova | 1961 |
| | ---; ---; 194 | Barnett & Toshioka | 1951 |
| <i>beltukovae</i> Rubtsov | Cold, clean and shaded spring streams with sand and silt bottom; ---; 256 (Bites man) | Ussova | 1961 |
| <i>bicornis</i> (Dorogustajski & Rubtsov) | Clean lake, mud, spring, streams, small mountain rivers with rocky bottom; ---; 256 (Bites man) | Ussova | 1961 |
| <i>bicornis</i> (Dorogustajski, Rubtsov & Vlasenko) | ---; ---; 194, 256 | Barnett & Toshioka | 1951 |

TABLE 1 - BLACK FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|--|-----------------------|------|
| <i>EUSIMULIUM</i> <i>bonninense</i> Shiraki | ---; ---; 257 | Shiraki | 1935 |
| <i>crassum</i> (Ruttzov) | Small mud streams with rocks and water plants; Aug.; 256 | Ussova | 1961 |
| <i>dogieli</i> (Ussova) | Mud streams with rocky bottom; July; 256 | Ussova | 1961 |
| <i>falsum</i> Shiraki | ---; ---; 158 | Shiraki | 1935 |
| <i>fontinale</i> (Ruttzov) | Fast moving mountain streams with rocky bottom; June; 256 | Ussova | 1961 |
| <i>goniatare</i> Shiraki | ---; ---; 77° | Shiraki | 1935 |
| <i>hololepis</i> Takahasi | ---; ---; 194 | Barnett & Toshioka | 1951 |
| <i>koidzumii</i> Takahasi | ---; ---; 194 | Barnett & Toshioka | 1951 |
| <i>larionum</i> Ruttzov | Warm moving waters, attached to rocky bottom; ---; 256. ---; ---; 294 | Ussova | 1961 |
| <i>latipes</i> (Meigen) | ---; ---; 194, 256, 345 (Near springs) | Barnett & Toshioka | 1951 |
| | Mud streams, lake, spring, small rivers with rocks; May; 256°, 294° | Ussova | 1961 |
| <i>longum</i> Ussova | Slow flowing cold water; May; 256 | Ussova | 1961 |
| <i>pygmaeum</i> (Zetterstedt) | River with rocky bottom; July-Aug.; 72. 256 | Ussova | 1961 |
| <i>ripes</i> Shiraki | ---; ---; 77° | Shiraki | 1935 |
| <i>robustum</i> (Ruttzov) | Big fast flowing rivers and clear water with rocky bottom, July-Aug.; 256° | Ussova | 1961 |
| <i>shikotsuensis</i> Takahasi | ---; ---; 194 | Takahasi | 1940 |
| <i>shikotsuensis</i> (Wahlberg) | Cold and clear small river, mountain streams with rocks and moss bottom; ---; 256 | Ussova | 1961 |

TABLE 1 - BLACK FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|--|--------------------|-------|
| <i>HELODON</i> | | | |
| <i>japonicum</i> (Matsumura) | ---; ---; 158° | Kono & Takahasi | 1940 |
| <i>sapporoensis</i> Shiraki | ---; ---; 158 | Shiraki | 1935 |
| <i>NEVERMANNIA</i> | | | |
| <i>brunetti</i> Enderlein | ---; ---; 143 | Enderlein | 1934 |
| <i>ODAGMIA</i> | | | |
| <i>bidentata</i> Shiraki | ---; ---; 158 | Shiraki | 1935 |
| <i>frigida</i> (Rubtsov) | River with vegetations, rivulets with warm water and seldom in reservoirs; ---; 256 | Ussova | 1961 |
| <i>halonensis</i> Takahasi | ---; ---; 194 | Takahasi | 1949 |
| <i>iwatensis</i> Shiraki | ---; ---; 158°, 256° | Kono & Takahasi | 1949 |
| | ---; ---; 158 | Shiraki | 1935 |
| <i>japonica</i> Shiraki | ---; ---; 158 | Shiraki | 1935 |
| <i>karankensis</i> Shiraki | ---; ---; 77 | Shiraki | 1935 |
| <i>kiritschenkoi</i> Rubtsov | ---; ---; 28 | Terterjan | 1957 |
| <i>monticola</i> (Friederick) | Cold streams; ---; 256, 345 | Ussova | 1961 |
| <i>oizumi</i> Shiraki | ---; ---; 158 | Shiraki | 1935 |
| <i>ornata</i> (Meigen) | ---; ---; 158, 162, 294. Lake streams and rivers; active in June and July; 256 | Ussova | 1961 |
| | ---; ---; 256° | Kono & Takahasi | 1940 |
| <i>rotundata</i> Rubtsov | Small streams and rivulets; ---; 256 | Ussova | 1961 |
| <i>PROSIMULIUM</i> | | | |
| <i>alpestre</i> Dorogustajski, Rubtsov & Vlasenko | ---; ---; 256 | Anonymous | 1945a |
| <i>ferrugineum</i> Wahlberg | ---; ---; 256 | Rubtsov | 1940 |

TABLE 1 - BLACK FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|--|-----------------------|-------|
| <i>PROSIMULIUM</i> <i>hirtipes</i> (Fries) | ---; ---; 194, 256 (Near springs and streams, attacks man severely) | Barnett & Toshioka | 1951 |
| | Mountains and rivers with no vegetation, fast streams; ---; 256° | Ussova | 1961 |
| <i>hirtipes</i> <i>tridentatum</i> (Fries) | ---; ---; 256 | Anonymous | 1945a |
| <i>kamtshaticum</i> Rubtsov | ---; ---; 256 | Anonymous | 1944 |
| <i>kamtshaticum</i> <i>irritans</i> (Rubtsov) | ---; ---; 256 | Anonymous | 1945 |
| <i>kiitoense</i> Shiraki | ---; ---; 158 | Shiraki | 1935 |
| <i>meropyga</i> (Lundström) | Spring rivulet, mountain streams, rivers, leaves and rocks; ---; 256 | Ussova | 1961 |
| <i>pezoense</i> Shiraki | ---; ---; 158° | Kono & Takahasi | 1940 |
| | ---; ---; 158 | Shiraki | 1935 |
| <i>colombaschensis</i> Fabricius | ---; ---; 256 | Ussova | 1961 |
| <i>SCHÖNHAUSERIA</i> <i>ortholepsis</i> Enderlein | In fast flowing water; ---; 256° | Bening | 1924 |
| | ---; ---; 294 | Enderlein | 1920 |
| <i>pusilla</i> (Fries) | Large and small rivers, smooth and fast flowing waters; July; 60, 256 | Ussova | 1961 |
| <i>pusilla</i> (Rubtsov) | Smooth and slow flowing waters with vegetation; ---; 256 | Ussova | 1961 |
| <i>pusilla</i> Meigen | ---; ---; 256 | Ussova | 1961 |
| <i>pusilla</i> Rubtsov | ---; ---; 256 | Anonymous | 1945a |
| <i>pusilla</i> Shiraki | ---; ---; 77 | Shiraki | 1935 |
| <i>pusilla</i> Lundström | ---; ---; 101 | Dampf | 1924 |
| | ---; ---; 256 | Anonymous | 1945a |

TABLE 1 - BLACK FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|------------------------------------|---|-----------|-------|
| <i>SIMULIUM</i> | | | |
| <i>annulipes</i> Shiraki | ---; ---; 158, 256 | Shiraki | 1935 |
| <i>arenosae</i> Rubtsov | ---; ---; 256 | Anonymous | 1945a |
| <i>argentipes</i> Edwards | ---; ---; 190 | Edwards | 1928 |
| <i>argyrolatus</i> Meigen | ---; ---; 101 | Dampf | 1924 |
| | Large and small rivers, warm and slow flowing waters, rivulets, rocks and vegetations; ---; 256. ---; June; 294 | Ussova | 1961 |
| <i>argyrochlamys</i> de Meijere | Grass in rapid streams; ---; 146, 149 | Edwards | 1934 |
| | ---; ---; 337 | Puri | 1932 |
| <i>arispum</i> Shiraki | ---; ---; 77 | Shiraki | 1935 |
| <i>atratum</i> de Meijere | ---; ---; 146 | Edwards | 1934 |
| | ---; ---; 190 | Edwards | 1928 |
| <i>auriculatus</i> Brunetti | ---; ---; 70 | Edwards | 1928 |
| | Small streams with vegetation, stagnant water; ---; 143, 235 | Puri | 1933b |
| | Channel in rice field; ---; 146, 149 | Edwards | 1934 |
| <i>caeruleum</i> Fries | ---; ---; 101 | Dampf | 1924 |
| | Streams; ---; 143 | Puri | 1933b |
| | ---; irritating bite, prefers to obtain blood from a number of punctures; 154° | Buxton | 1924 |
| | ---; June; 256° | Olenev | 1945 |
| | ---; ---; 256 | Rubtsov | 1940 |
| <i>caudatum</i> Edwards | Fast flowing warm water, large river bottom with vegetation and rocks; ---; 60, 256 | Ussova | 1961 |
| <i>californicum</i> Delfinado | ---; ---; 242 | Delfinado | 1960 |
| <i>californicum</i> Delfinado | ---; ---; 242 | Delfinado | 1960 |

TABLE 1 - BLACK FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|--|---------------------------------------|----------------------|
| <i>SIMULIUM barraudi</i> Puri | Streams; ---; 143, 235 | Puri | 1932c |
| <i>batoensa</i> Edwards | Small and not very rapid streams; ---; 146 | Edwards | 1934 |
| <i>beckeri</i> Roubaud | ---; ---; 342 | Edwards | 1923 |
| <i>bianchii</i> Rubtzov | ---; ---; 256 | Anonymous | 1945a |
| <i>blacarne</i> Dorogustajski & Rubtzov | ---; ---; 256 | Anonymous | 1945a |
| <i>bicornis</i> Dorogustajski & Rubtzov | ---; ---; 256 | Rubtzov | 1940 |
| <i>bipunctatum</i> Austen | ---; May-June, common after sunrise; 151 | Austen | 1923 |
| <i>bujakovi</i> Rubtzov | ---; ---; 256 | Anonymous | 1945a |
| <i>cygnorum</i> Enderlein | ---; ---; 190 | Edwards | 1928 |
| <i>choledkovskii</i> Rubtzov | Found on grass and stones in rivers; June-July, 256° ---; on vegetation; 256 | Rubtzov | 1940 |
| <i>christophersi</i> Puri | Streams; ---; 143, 235 | Puri | 1932b |
| <i>conimilis</i> Puri | Mill-stream, river, stream; ---; 143 | Puri | 1932 |
| <i>crassum</i> Friedrichs | Streams and rivers of moderate speed; severe bloodsucker; 256° ---; ---; 256 ---; ---; 345 | Edwards et al Rubtzov Pronevich | 1939 1940 1945 |
| <i>curvicauda</i> Rubtzov | ---; ---; 256 | Anonymous | 1944 |
| <i>dissectum</i> Dorogustajski, Rubtzov & Nasenko | ---; ---; 256 | Rubtzov | 1940 |

TABLE 1 - BLACK FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|----------------------|-------|
| <i>SIMULIUM</i> | | | |
| <i>dentatum</i> Puri | Hill streams; ---; 143 | Puri | 1932c |
| <i>dershavini</i> Rubtzov | ---; ---; 256 | Anonymous | 1945a |
| <i>deserticola</i> (Rubtzov) | ---; ---; 256 | Anonymous | 1944a |
| <i>digitatum</i> Puri | Streams; ---; 143 | Puri | 1932c |
| <i>digrammicum</i> Edwards | ---; ---; 190, 277 | Edwards | 1928 |
| <i>diversipes</i> Edwards | ---; ---; 146 | De Meillon | 1930 |
| <i>duodecimatum</i> (Rubtzov) | ---; ---; 256 | Anonymous | 1945a |
| <i>edwardsianum</i> Gibbins | ---; ---; 256 | Anonymous | 1945a |
| <i>ephemerophilum</i> Rubtzov | In rivers, on larvae of <i>Ephemera</i> ; ---; 162 | Grenier & Mouchet | 1959 |
| <i>equinum</i> (Linnaeus) | Below surface of water; ---; 76 | Patton | 1926 |
| | ---; ---; 101 | Dampf | 1924 |
| | ---; ---; 154 | Austen | 1921 |
| | ---; ---; 256 | Anonymous | 1945a |
| | ---; ---; 342 | Edwards | 1923 |
| <i>equinum</i> var. <i>mediterraneum</i> Puri | Streams with grass; ---; 143. Submerged grass in irrigation channel, river and stream on stones; ---; 235 | Puri | 1933b |
| | ---; ---; 345 | Rubtzov | 1940 |
| <i>erythrocephalum</i> (De Geer) | ---; ---; 256 | Anonymous | 1944a |
| <i>eximium</i> de Meijere | ---; ---; 146 | Edwards | 1934 |
| | ---; ---; 190 | Edwards | 1928 |
| | ---; ---; 337 | Puri | 1932 |

TABLE 1 - BLACK FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|---------------------------|-------|
| <i>SIMULIUM</i> | | | |
| <i>fenestratum</i> Edwards | Forest streams; ---; 149 | Edwards | 1934 |
| <i>ferganica</i> Rubtzov | ---; ---; 345 | Rubtzov | 1940 |
| <i>ferrugineum</i> Wahlberg | ---; ---; 256 | Ussova | 1961 |
| <i>feuerborni</i> Edwards | Streams; ---; 146 | Edwards | 1934 |
| <i>flavipes</i> Austen | ---; ---; 159 | Austen | 1921 |
| <i>flavoantennatum</i> (Rubtzov) | ---; ---; 256 | Anonymous | 1945a |
| <i>flavocinctum</i> Edwards | Forest stream; ---; 149 | Edwards | 1934 |
| <i>forbesi</i> Malloch | ---; ---; 256 | Ussova | 1961 |
| <i>fridolini</i> Rubtzov | ---; ---; 256 | Anonymous | 1945a |
| <i>friederichsi</i> Edwards | ---; ---; 146 | Edwards | 1934 |
| <i>fuscopilosum</i> Edwards | ---; ---; 190 | Edwards | 1928 |
| <i>galeratum</i> Edwards | ---; river; 256° | Detinova & Bel'Tyukova | 1958 |
| <i>gravelyi</i> Puri | Stream; ---; 143 | Puri | 1933 |
| <i>griseifrons</i> Brunetti | Streams, falls; ---; 143, 235 | Puri | 1932c |
| | ---; ---; 190 | Edwards | 1928 |
| <i>griseescens</i> Brunetti | ---; ---; 70 | Senior-White | 1922 |
| | Streams; ---; 143 | Puri | 1932 |
| | ---; ---; 190 | Edwards | 1928 |
| <i>griseescens</i> <i>palmatum</i> Puri | Streams; ---; 143 | Puri | 1932 |
| <i>gurneyae</i> Senior-White | Streams; ---; 143 | Puri | 1932a |

TABLE 1 - BLACK FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---------------------------------|--|-----------------------|-------|
| <i>SIMULIUM</i> | | | |
| <i>haakeri</i> Edwards | ---; in mountains; 190, 277 | Edwards | 1928 |
| <i>halonensis</i> Takahasi | ---; ---; 194 | Barnett & Toshioka | 1951 |
| <i>himalayense</i> Puri | Small streams, hills; ---; 143 | Puri | 1932a |
| <i>hirtinervis</i> Edwards | ---; ---; 190 | Edwards | 1928 |
| <i>hirtipannus</i> Puri | ---; ---; 143 | Puri | 1932 |
| <i>hirtipes</i> Fries | Cold and clean waters in mountain-like areas; ---; 256 | Ussova | 1961 |
| | ---; ---; 256° (In rapid hill streams; on large stones or rocky bottom) | Edwards et al. | 1939 |
| | ---; ---; 342 | Bodenheimer | 1937 |
| <i>howletti</i> Puri | ---; ---; 143 | Puri | 1932 |
| <i>indicum</i> Becker | ---; ---; 143° | Brunetti | 1917 |
| | ---; ---; 190 | Edwards | 1928 |
| <i>iridescens</i> de Meijere | Forest streams; ---; 146, 149 | Edwards | 1934 |
| | ---; ---; 190 | Edwards | 1928 |
| <i>ishikawai</i> Takahasi | ---; ---; 194 | Takahasi | 1940 |
| <i>jaenticum</i> (Rubtzov) | ---; ---; 256 | Anonymous | 1945a |
| <i>japonicum</i> Matsumura | ---; ---; 158, 170, 256 | Kono & Takahasi | 1940 |
| <i>kariyai</i> Takahasi | ---; ---; 194 | Hsiao | 1946 |
| <i>kashmiricum</i> Edwards | ---; ---; 235° | Edwards | 1927 |
| <i>katoi</i> Shiraki | ---; ---; 77 | Shiraki | 1935 |
| <i>kerteszi</i> Enderlein | ---; ---; 101 | Dampf | 1924 |

TABLE 1 - BLACK FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|------------------|-------|
| <i>SIMULIUM</i> | | | |
| <i>kerteszi</i> | | | |
| <i>melanobrachium</i> Dampf | ---; ---; 101 | Dampf | 1924 |
| <i>koidzumi</i> Takahasi | ---; ---; 194 | Hsiao | 1946 |
| <i>lanata</i> Takahasi | ---; ---; 194 | Hsiao | 1946 |
| <i>latipes</i> Meigen | ---; June; 256° | Olenev | 1945 |
| | ---; ---; 256 | Rubtzov | 1940 |
| | ---; ---; 342 | Bodenheimer | 1937 |
| | ---; ---; 345 | Pronevich | 1945 |
| <i>latipes</i> var. <i>tjibodense</i> Edwards | ---; ---; 146 | Edwards | 1934 |
| <i>latipes</i> var. <i>tosariense</i> Edwards | ---; ---; 146 | Edwards | 1934 |
| <i>latistriatum</i> Senior-White | ---; ---; 143 | Senior-White | 1922 |
| | ---; ---; 190 | Edwards | 1928 |
| <i>lineatum</i> Puri | Streams; ---; 143 | Puri | 1932c |
| <i>lineothorax</i> Puri | ---; ---; 143 | Puri | 1932 |
| <i>lyra</i> (Lundström) | ---; ---; 256 | Anonymous | 1945a |
| <i>maculatum</i> Meigen | Submerged vegetation in not too strong current; ---; 256 | Bening | 1924 |
| | ---; islands in river, June; 256° | Olenev | 1945 |
| <i>maculatum</i> <i>ussurianum</i> Rubtzov | ---; ---; 256 | Blagoveschenskii | 1940 |
| <i>malyahevi</i> Dorogustajski & Rubtzov | ---; ---; 256 | Rubtzov | 1940 |
| <i>matthiesseni</i> Enderlein | ---; islands in river, June; 256° | Olenev | 1945 |

TABLE 1 - BLACK FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|----------------------------------|---|-----------------------|-------|
| <i>SIMULIUM</i> | | | |
| <i>melanopus</i> Edwards | ---; ---; 242 | Delfinado | 1960 |
| <i>metatarsale</i> (Brunetti) | ---; ---; 143, 146 | Edwards | 1934 |
| | ---; ---; 190 | Edwards | 1928 |
| <i>minutum</i> Shiraki | ---; ---; 77 | Shiraki | 1935 |
| <i>montanum</i> Rubtzov | ---; ---; 345 | Pronevich | 1945 |
| <i>monticola</i> Friedrichs | ---; ---; 345 | Rubtzov | 1940 |
| <i>morsitans</i> Edwards | ---; ---; 194, 256 (Bites man) | Barnett & Toshioka | 1951 |
| | Warm waters, small and large clean, slow-flowing rivers; July-Aug.; 256. ---; ---; 294 | Ussova | 1961 |
| <i>murmanum</i> Enderlein | ---; ---; 256 | Enderlein | 1935 |
| <i>nebulicola</i> Edwards | ---; ---; 146 | Edwards | 1934 |
| <i>nikkoense</i> Shiraki | ---; ---; 158 | Shiraki | 1935 |
| <i>nilgiriicum</i> Puri | ---; ---; 143 | Puri | 1932a |
| <i>nipponense</i> Shiraki | ---; ---; 158* | Kono & Takahasi | 1940 |
| | ---; ---; 158 | Shiraki | 1935 |
| <i>nitidithorax</i> Puri | ---; ---; 143 | Puri | 1933a |
| <i>nobile</i> de Meijere | ---; at light; 146 | Edwards | 1925 |
| | ---; ---; 149 | Edwards | 1934 |
| | ---; ---; 190 | Edwards | 1928 |
| <i>nodosum</i> Puri | ---; ---; 143 | Puri | 1933a |
| <i>nölleri</i> Friedrichs | ---; ---; 194 | Barnett & Toshioka | 1951 |
| | Warm streams and rivulets with rocky bottom; ---; 256. ---; ---; 294 (Bites man) | Ussova | 1961 |

TABLE 1 - BLACK FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|--|-----------------------|-------|
| <i>SIMULIUM</i> | | | |
| <i>novolineatum</i> Puri | ---; ---; 143 | Puri | 1933a |
| <i>omorii</i> Takahasi | ---; ---; 194 | Barnett & Toshioka | 1951 |
| <i>ornatum</i> Meigen | ---; ---; 101 | Dampf | 1924 |
| | ---; ---; 143 | Puri | 1932 |
| | ---; June; 256° | Olenev | 1945 |
| | ---; ---; 256 | Rubtzov | 1940 |
| <i>ornatum</i> <i>caucasicum</i> Rubtzov | In clear water; ---; 256 | Pronevich | 1945 |
| | ---; ---; 345 | Rubtzov | 1940 |
| <i>oshimanum</i> Shiraki | ---; ---; 158 | Shiraki | 1935 |
| <i>pallidum</i> Puri | Small streams, rivers; ---; 143 | Puri | 1932 |
| <i>pallipes</i> Meigen | ---; ---; 256 | Ussova | 1961 |
| | ---; ---; 345 | Rubtzov | 1940 |
| <i>palmiense</i> Puri | Streams; ---; 143 | Puri | 1933 |
| <i>paraequinum</i> Puri | ---; ---; 28 | Crosskey | 1962 |
| | Stream; ---; 235 | Puri | 1933b |
| <i>paramonitans</i> Rubtzov | Warm and fast flowing water, river bottom with vegetations; ---; 60, 256, 321 | Ussova | 1961 |
| <i>pattoni</i> Senior-White | ---; ---; 70 | Puri | 1932 |
| | ---; ---; 143 | Senior-White | 1922 |
| | ---; ---; 190 | Edwards | 1928 |
| <i>philipinensis</i> Delfinado | ---; ---; 242 | Delfinado | 1960 |
| <i>popovae</i> Rubtzov | ---; ---; 345 | Rubtzov | 1940 |
| <i>pseudonartium</i> (Rubtzov) | ---; ---; 256 | Anonymous | 1944 |
| <i>pulchripes</i> Austen | River bed; ---; 317 | Austen | 1925 |

TABLE 1 - BLACK FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|---|-----------------------|-------|
| <i>SIMULIUM</i> <i>pusillum</i> Fries | ---; Aug.; 256 | Breev | 1950 |
| <i>ramosum</i> Puri | ---; ---; 143 | Puri | 1932b |
| <i>relictum</i> Rubtzov | ---; ---; 256 | Rubtzov | 1940 |
| <i>reptans</i> Linnaeus | ---; ---; 28 | Popoff | 1924 |
| | ---; ---; 194° | Barnett & Toshioka | 1951 |
| | ---; ---; 194 | Takahasi | 1940 |
| | Fast flowing clean rivers; ---; 256, 294 (Bites man) | Ussova | 1961 |
| <i>reptans</i> var. <i>syriaca</i> Roubaud | ---; ---; 342 | Bodenheimer | 1937 |
| <i>rufibasis</i> Brunetti | Streams, rivers; ---; 143 | Puri | 1932b |
| | ---; ---; 190 | Edwards | 1928 |
| <i>rufibasis</i> <i>fasciatum</i> Puri | Streams; ---; 143 | Puri | 1932b |
| | Hill stream; ---; 235 | Puri | 1932b |
| <i>ruficornis</i> Macquart | ---; ---; 342 | Van Someren | 1944 |
| <i>rufithorax</i> Brunetti | ---; ---; 190 | Edwards | 1928 |
| <i>senile</i> Brunetti | ---; ---; 143 | Brunetti | 1917 |
| | ---; ---; 190 | Edwards | 1928 |
| <i>septentrionale</i> Enderlein | ---; ---; 256 | Enderlein | 1935 |
| <i>sericeatum</i> Meigen | ---; ---; 101 | Dampf | 1924 |
| <i>shaujakovi</i> Dorogustajski & Rubtzov | ---; ---; 256 | Rubtzov | 1940 |
| <i>sibiricum</i> Enderlein | ---; ---; 256 | Anonymous | 1945a |

TABLE 1 - BLACK FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|---|-----------------------|-------|
| <i>SIMULIUM</i> <i>similis</i> Rubtzov | In streams; ---; 256 | Rubtzov | 1940 |
| <i>splendidum</i> Rubtzov | ---; ---; 194, 256 | Barnett & Toshioka | 1951 |
| <i>stevensoni</i> Edwards | ---; ---; 235 | Edwards | 1927 |
| <i>striatum</i> Brunetti | ---; ---; 70, 143 | Puri | 1932 |
| | ---; ---; 190 | Edwards | 1928 |
| | ---; ---; 349 | De Mello & Afonso | 1921 |
| <i>submorsitans</i> (Seguy) | ---; ---; 256 | Anonymous | 1945a |
| <i>subornatum</i> Edwards | ---; ---; 256 | Rubtzov | 1940 |
| <i>subpusillum</i> (Fries) | ---; ---; 256 | Anonymous | 1945a |
| <i>subvariegatum</i> Rubtzov | ---; ---; 256 | Rubtzov | 1940 |
| <i>sundatium</i> Edwards | Small stream; ---; 146, 149 | Edwards | 1934 |
| <i>tarnogradskii</i> Rubtzov | ---; April-June; 35 | Abusalimov | 1947 |
| | ---; ---; 345 | Rubtzov | 1940 |
| <i>tenuitarsus</i> Puri | Stream; ---; 143 | Puri | 1933 |
| <i>terminassjanae</i> Rubtzov | ---; ---; 345 | Pronevich | 1945 |
| <i>thienemannii</i> Edwards | ---; ---; 146 | Edwards | 1934 |
| <i>transbaicalicus</i> Rubtzov | ---; ---; 256 | Rubtzov | 1940 |
| <i>transcaspius</i> Enderlein | ---; ---; 345 | Enderlein | 1920 |
| <i>transiens</i> Rubtzov | ---; ---; 256 | Rubtzov | 1940 |

TABLE 1 - BLACK FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|--------------------|-------|
| <i>SIMULIUM</i> <i>truncatum</i> Lundström | Warm waters, small and large streams, rivulets, bottom rocks and plants; June; 256. ---; ---; 294 (Bites man) | Jasova | 1961 |
| <i>tuberosum</i> (Lundström) | Small and large fast flowing warm rivers, streams with vegetation and rocky bottom; ---; 256 (Bites man) | Uasova | 1961 |
| | ---; Aug.; 256 | Breev | 1950 |
| <i>tuberosum</i> <i>polare</i> Lundström | ---; ---; 256 | Anonymous | 1945a |
| <i>tuberosum</i> <i>vulgaris</i> Dorogustajski & Rubtsov | ---; ---; 256 | Rubtsov | 1940 |
| <i>varicatum</i> Seguy | ---; ---; 342 | Bodenheimer | 1937 |
| <i>varicorne</i> Edwards | Forest stream; ---; 146, 149 | Edwards | 1934 |
| | ---; in house; 149 | Edwards | 1925 |
| | ---; ---; 190 | Edwards | 1928 |
| <i>variegatum</i> Meigen | ---; ---; 345 | Pliginskich | 1945 |
| <i>varium</i> Meigen | ---; ---; 342 | Bodenheimer | 1937 |
| <i>venustum</i> Say | ---; ---; 158°, 256° | Kono & Takahasi | 1940 |
| | ---; June; 256 | Olenev | 1945 |
| <i>venustum</i> <i>swedeni</i> Edwards | ---; ---; 256 | Anonymous | 1945 |
| <i>venustum</i> <i>kamtshaticum</i> Rubtsov | ---; ---; 256 | Anonymous | 1944 |
| <i>yakutense</i> Shiraki | ---; ---; 158 | Shiraki | 1935 |
| <i>amictus</i> Rubtsov | ---; April-June; 35 | Abusalimov | 1947 |
| <i>amictus</i> Edwards | Forest stream; ---; 149 | Edwards | 1934 |

TABLE 1 - BLACK FLIES (concluded)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|--|-----------|------|
| <i>STEGOPTERNA</i> <i>richteri</i> Enderlein | Shallow rivulets with bed channel covered with small rocks or silt; ---; 256 | Ussova | 1961 |
| <i>STILBOPLAX</i> <i>equinum</i> Linnaeus | ---; occasionally bites man; 158° | Shiraki | 1935 |
| <i>S-striatum</i> Shiraki | ---; ---; 77, 158 | Shiraki | 1935 |
| <i>TITANOPTERYX</i> <i>koidzumii</i> Takahasi | ---; ---; 194 | Takahasi | 1940 |
| <i>WILHELMIA</i> <i>equina</i> (Linnaeus) | Large and small rivers, smooth and fast flowing water with vegetation; ---; 256. ---; ---; 294 (Bites man) | Ussova | 1961 |
| <i>paraequina</i> Puri | ---; ---; 28 | Terterjan | 1957 |

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C. SAND FLIES

The sand fly entries include a few species of Psychodinae which do not bite but may be pests of man, often causing allergic reactions. Little is to be found in the literature on the biology and disease transmissions of these species. Most of the data are distributional records.

The tables include 166 species or subspecies most of which are in the large genus *Phlebotomus*.

TABLE 1 - SAND FLIES

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|---------------------------|--------|
| <i>PERICOMA</i> | | | |
| <i>margininotata</i> Brunetti | ---; ---; 143 | Brunetti | 1917 |
| <i>margininotata</i> var. <i>bella</i> Brunetti | ---; ---; 143 | Brunetti | 1917 |
| <i>metatarsalis</i> Brunetti | ---; ---; 143 | Brunetti | 1917 |
| <i>metatarsalis</i> var. <i>knasiensis</i> Senior-White | ---; ---; 143 | Senior-White | 1922 |
| <i>mixta</i> Brunetti | ---; ---; 143 | Brunetti | 1917 |
| <i>spiniornis</i> Brunetti | ---; ---; 143 | Brunetti | 1917 |
| <i>PHLEBOTOMUS</i> | ---; ---; 143, 342 | Theodor | 1948 |
| <i>africana</i> | --- | | |
| <i>asiatica</i> (Theodor) | ---; ---; 154 | Pringle | 1953 |
| <i>africanus</i> Newstead | ---; ---; 143 | Sinton | 1932 a |
| | ---; ---; 154, 159 | Adler & Theodor | 1929 |
| | ---; ---; 326 | Khodukin | 1929 |
| | ---; ---; 342 | Adler & Theodor | 1927 |
| <i>alexandri</i> Sinton | ---; ---; 31 | Theodor | 1948 |
| | ---; ---; 143, 317 | Theodor | 1947 |
| | ---; ---; 151°, 154 | Pringle | 1953 |
| | ---; caves, ruins; 162 | Grebel'skii | 1939 |
| | ---; enters houses; 166 | Petrishcheva & Aluimov | 1940 |
| | ---; enters houses; 318 | Petrishcheva | 1936 |
| <i>angustipennis</i> de Meijere | ---; ---; 146 | Sinton | 1928 |
| <i>annandalei</i> Sinton | ---; ---; 70 | Sinton | 1924 a |
| | ---; enters houses, Feb.; 143 | Sinton | 1923 |

TABLE 1 - SAND FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|--|-------------------------|--------|
| <i>PHLEBOTOMUS</i> <i>antennatus</i> Newstead | ---; July-Aug., enters houses; 70 | Carter & Antonipulle | 1949 |
| | ---; ---; 143 | Roy & Brown | 1954 |
| <i>arboris</i> Sinton | ---; ---; 70 | Theodor | 1948 |
| | Tree holes; ---; 143 | Sinton | 1932 a |
| <i>argentipes</i> Annandale & Brunetti | ---; warm moist climate up to 4,000 feet altitude, suspected carrier of Kala-azar; 59, 143 | Sinton | 1932 a |
| | ---; enters houses, July, Aug. and Jan.; 70 | Carter & Antonipulle | 1949 |
| | ---; active all year; 70, 143 | Sinton | 1924 a |
| | ---; ---; 70 (Bites man). ---; carrier of <i>Leishmania</i> ; 143 | Roy & Brown | 1954 |
| | Sides of reservoirs, in soil sheltered from sun by thick vegetation; enters houses; 143 | Smith et al. | 1936 |
| | Debris near houses; rare Dec.-Feb.; 143 | Shortt et al. | 1930 |
| | ---; transmits visceral Leishmaniasis by crushing and occasionally by bite; 143*° | Adler | 1929 |
| | ---; naturally infected with <i>Leishmania donovani</i> , experimentally infected with Kala-azar; 143 | Shortt et al. | 1927 |
| | ---; experimentally infected with <i>Leishmania</i> <i>donovani</i> and <i>L. tropica</i> ; 143 | Napier | 1930 |
| | ---; suspected vector of visceral Leishmania; 143. ---; April; 144 | Raynal & Gaschen | 1935 d |
| | ---; experimental transmission of Kala-azar; 143 | Shortt & Swaminath | 1928 |
| | ---; in stables; 143 | Christophers et al. | 1925 |
| | ---; Apr.-June; 143 | McCombie Young | 1927 |
| | ---; Mar.-Nov.; 143 | Shortt | 1945 |
| <i>argentipes</i> <i>marginatus</i> Annandale | ---; ---; 70, 143 | Sinton | 1924 a |

TABLE 1 - SAND FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---------------------------------|--|-------------------------|--------|
| <i>PHLEBOTOMUS</i> | | | |
| <i>babu</i> | ---; ---; 143° | Smith et al. | 1936 |
| <i>Annandale</i> | ---; ---; 143 | Sinton | 1932 a |
| | ---; ---; 235 | Roy & Brown | 1954 |
| <i>babu</i> | | | |
| <i>var. niger</i> | ---; ---; 143 | Sinton | 1932 a |
| <i>Annandale</i> | | | |
| <i>baghdadis</i> | ---; ---; 143, 235 | Roy & Brown | 1954 |
| <i>Adler & Theodor</i> | ---; ---; 151 | Adler & Theodor | 1929 |
| <i>bailyi</i> | ---; enters houses; 143. ---; ---; 235 | Sinton | 1931 a |
| <i>Sinton</i> | | | |
| <i>bailyi</i> | ---; ---; 76, 133. ---; plains; 143. ---; wooded rolling country, at altitudes of 20-130 meters, enters houses, abandoned buildings and ruins; 144 | Dicke & Hsiao | 1946 |
| <i>campester</i> | ---; plains, hilly regions; 144 | Gaschen & Nguyen-Nguyen | 1938 |
| <i>Sinton</i> | ---; enters houses; 277 | Sinton | 1931 |
| <i>barraudi</i> | ---; ---; 59, 143 | Hsiao | 1945 |
| <i>Sinton</i> | ---; enters houses, on man; 76°. ---; in low regions, in altitudes of 3,900-5,200 feet, near dwellings; 144° | Raynal | 1936 |
| | ---; August; 76. ---; May-June; 144 | Raynal & Gaschen | 1935 |
| | ---; ---; 133, 144 (Found almost exclusively at high altitudes) | Dicke & Hsiao | 1946 |
| <i>barraudi</i> | | | |
| <i>var. kwangsiensis</i> | ---; ---; 76, 133 | Dicke & Hsiao | 1946 |
| <i>Yao & Wu</i> | | | |
| <i>barraudi</i> | ---; ---; 143, 144, 277 (Cool moist soil rich with decaying matter, enters houses) | Causey | 1938 |
| <i>var. siamensis</i> | | | |
| <i>Causey</i> | | | |
| <i>bigtii</i> | ---; ---; 242 | Manalang | 1931 |
| <i>Manalang</i> | | | |
| <i>borovskii</i> | ---; ---; 31 | Chodukin & Sofieff | 1931 |
| <i>(Chodukin & Sofieff)</i> | | | |

TABLE 1 - SAND FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|---|-------------------------|------|
| <i>PHLEBOTOMUS</i> <i>bukidnonis</i> Quate | ---; tree holes; 242 | Quate | 1965 |
| <i>caucasicus</i> Marzinowsky | ---; ---; 3, 162, 325, 345. ---; bites day and night, indoors and outdoors, experimentally infected with <i>Leishmania tropica</i> ; 150° | Adler et al. | 1930 |
| | ---; ---; 28 | Burakova & Mirzayan | 1934 |
| | ---; ---; 31 | Chodukin & Sofieff | 1931 |
| | Dark, damp places with decomposing organic matter; June-Nov.; 118 | Kamalow | 1934 |
| | ---; caves and ruins; 162 | Grebel'skii | 1939 |
| | ---; enters houses; 166° | Petrishcheva & Aluimov | 1940 |
| | ---; ---; 303° | Shchurenkova | 1937 |
| | ---; ---; 317 | Anonymous | 1944 |
| | ---; ---; 321 | Nasonov | 1929 |
| <i>chalami</i> Young & Chalam | ---; ---; 143 | McCombie Young & Chalam | 1927 |
| <i>chinensis</i> Newstead | ---; ---; 28 | Burakova & Mirzayan | 1934 |
| | ---; ---; 31 | Chodukin & Sofieff | 1931 |
| | ---; ---; 35 | Perfil'ev & Gutzevich | 1935 |
| | ---; experimentally infected with flagellates, naturally infected with and vector of <i>Leishmania donovani</i> , May-Sept., enters houses; 76*. ---; experimentally infected with flagellates; 144 | Dicke & Hsiao | 1946 |
| | ---; naturally infected with flagellates, in houses, May-July; 76* | Yuan | 1939 |
| | ---; experimental transmission of <i>Leishmania donovani</i> ; 76 | Hindle | 1931 |
| | ---; carrier of <i>Leishmania donovani</i> ; 76 | Roy & Brown | 1954 |
| | ---; naturally infected with <i>Wuchereria bancrofti</i> , in houses; 76 | Hsiao | 1943 |

TABLE 1 - SAND FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|------------------------|--------|
| <i>PHLEBOTOMUS chinensis</i> Newstead (cont.) | ---; ---; 76, 194 (Attacks man) | Barnett & Toshioka | 1951 |
| | Dark, damp places with decomposing organic matter; June-Nov.; 118 | Kamalov | 1934 |
| | ---; ---; 143, 345 | Sinton | 1928 |
| | ---; enters houses, in cracks and crevices; 154 | Jacusieli | 1947 |
| | --- ---; 152, 302, 326, 342. ---; restricted to highlands, rare; 150 | Adler et al. | 1930 |
| | ---; June-Aug.; 162° | Andreev | 1943 |
| | ---; enters houses; 166 | Petrishcheva & Aluimov | 1940 |
| | ---; ---; 174 | Adler & Theodor | 1929 |
| | ---; ---; 194* | Anonymous | 1946 |
| | ---; ---; 317 | Anonymous | 1944 |
| | ---; ---; 321 | Artemenko | 1945 |
| | ---; ---; 326 | Perfil'ev | 1931 |
| <i>chinensis longiductus</i> Nitzulescu | ---; ---; 150, 256, 302 | Dicke & Hsiao | 1946 |
| | ---; ---; 303° | Shchurenkova | 1937 |
| | ---; ---; 326 | Theodor | 1948 |
| <i>chinensis sinici</i> Nitzulescu | ---; ---; 150, 154 | Pringle | 1953 |
| | ---; ---; 342 | Theodor | 1948 |
| <i>christophersi</i> Sinton | ---; ---; 143 | Sinton | 1932 a |
| <i>olydei</i> Sinton | ---; ---; 143 | Sinton | 1932 a |
| | ---; enters houses; 235 | Sinton | 1928 |
| | ---; ---; 303 | Shchurenkova | 1941 |
| <i>oulabaensis</i> Young & Chalam | ---; ---; 143 | Sinton | 1928 |
| <i>oriniensis</i> Shtefko & Minkevich | ---; ---; 256* | Shtefko & Minkevich | 1923 |

TABLE 1 - SAND FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|----------------------------------|---|---------------------------|--------|
| <i>PHLEBOTOMUS</i> | | | |
| <i>dapsilidentae</i> Quate | ---; in forest; 242 | Quate | 1965 |
| <i>dayapensis</i> Manalang | ---; ---; 242 | Manalang | 1931 |
| <i>delfinadoae</i> Quate | ---; tree holes; 242 | Quate | 1965 |
| <i>demeijerei</i> Nitzulescu | ---; ---; 143 | Sinton | 1933 |
| | ---; ---; 146 | Nitzulescu | 1930 |
| <i>dentaceus</i> Quate | ---; under loose tree bark; 242 | Quate | 1965 |
| <i>dentatus</i> Sinton | ---; ---; 143, 162 | Theodor | 1948 |
| | ---; ---; 235 | Sinton | 1933 a |
| <i>dubosqui</i> Neveu-Lemaire | ---; ---; 28 | Sinton | 1928 |
| | ---; ---; 162 | Popov | 1929 |
| <i>edithae</i> Sinton | ---; ---; 143 | Sinton | 1932 |
| <i>eleanorae</i> Sinton | ---; enters houses; 143 | Sinton | 1931 a |
| <i>erebicolus</i> Quate | ---; bat-inhabited limestone cave; 242 | Quate | 1965 |
| <i>exastis</i> Quate | ---; malaise trap, tree holes; 242 | Quate | 1965 |
| <i>franciscanus</i> Quate | ---; tree holes; 242 | Quate | 1965 |
| <i>grekovi</i> Khodukin | ---; ---; 31, 326 | Chodukin & Sofieff | 1931 |
| | ---; caves and ruins; 162 | Grebel'skii | 1939 |
| | ---; enters houses; 166 | Petrishcheva & Aluimov | 1940 |
| | ---; enters houses; 318 | Petrishcheva | 1936 |

TABLE 1 - SAND FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|---------------------|--------|
| <i>PHLEBOTOMUS</i> <i>haiseri</i> Manalang | ---; ---; 242 | Manalang | 1930 |
| <i>himalayensis</i> Annandale | ---; ---; 70, 143 | Sinton | 1924 a |
| <i>hitchensi</i> Manalang | Tree holes; Oct.; 242 | Manalang | 1930 |
| | ---; in forests; 242 | Quate | 1965 |
| <i>hiernus</i> Raynal & Gaschen | ---; ---; 144 | Raynal & Gaschen | 1935 c |
| <i>hodgsoni</i> Sinton | ---; ---; 143 | Theodor | 1948 |
| | ---; ---; 151 | Pringle | 1953 |
| | ---; enters houses; 235 | Sinton | 1933 b |
| <i>hospitii</i> Sinton | ---; ---; 143 | Sinton | 1933 |
| <i>imitor</i> Quate | ---; under loose tree bark; 242 | Quate | 1965 |
| <i>iraqi</i> Adler & Theodor | ---; ---; 151 | Adler & Theodor | 1929 |
| <i>iyengari</i> Sinton | ---; ---; 143 | Sinton | 1933 c |
| | ---; March; 144 | Raynal & Gaschen | 1935 b |
| <i>iyengari</i> var. <i>hainanensis</i> Yao & Wu | ---; ---; 133 | Hsiao | 1945 |
| <i>iyengari</i> <i>hibernus</i> Raynal & Gaschen | ---; ---; 144 | Theodor | 1948 |
| <i>jacobsfeldi</i> Theodor | ---; ---; 154 | Pringle | 1953 |
| | ---; ---; 342 | Theodor | 1948 |
| <i>kaohsiungensis</i> Yao & Wu | ---; ---; 76 | Theodor | 1948 |
| | ---; ---; 133 | Hsiao | 1945 |

TABLE 1 - SAND FLIES (continued).

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|--|---------------------|--------|
| <i>PHLEBOTOMUS</i> <i>kandelakii</i> Schourenkova | ---; ---; 28 | Eurakova & Mirzayan | 1934 |
| | ---; ---; 35 | Kamaloff | 1933 |
| | Dark, damp places with decomposing organic matter; June-Nov., peak in July, Sept.; 118 | Kamalov | 1934 |
| | ---; restricted to highlands, June; 150 | Adler et al. | 1930 |
| | ---; ---; 162, 174 | Theodor | 1948 |
| | ---; ---; 256, 326, 345 | Perfil'ev | 1931 |
| | ---; ---; 318 | Perfil'ev | 1932 |
| <i>keshishiani</i> Shchurenkova | ---; ---; 162 | Theodor | 1948 |
| | ---; ---; 303° | Shchurenkova | 1937 |
| <i>khawi</i> Raynal | ---; ---; 76 | Barnett & Toshioka | 1951 |
| <i>kiangsuensis</i> Yao & Wu | ---; ---; 76, 168° | Barnett & Toshioka | 1951 |
| <i>lagunensis</i> Quate | ---; ---; 242 | Quate | 1965 |
| <i>Larroussiei</i> <i>cananiticus</i> Adler & Theodor | ---; ---; 154 | Pringle | 1953 |
| <i>li</i> Popov | ---; ---; 28, 150, 162, 345 | Sinton | 1928 |
| | ---; ---; 326 | Carrot | 1928 |
| <i>losareus</i> Quate | ---; under loose tree bark; 242 | Quate | 1965 |
| <i>macedonicus</i> Adler & Theodor | ---; implicated in the transmission of Kala-azar; 342 | Anonymous | 1944 a |
| <i>major</i> Annandale | ---; ---; 28 | Eurakova & Mirzayan | 1934 |
| | ---; ---; 31, 76 | Heian | 1945 |
| | ---; ---; 35 | Popov | 1935 |
| | ---; 5,000 feet-7,000 feet, disappears in the winter; 70, 143 | Sinton | 1924 a |

TABLE 1 - SAND FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|--|--------------------|--------|
| <i>PHLEBOTOMUS</i> <i>major</i> Annandale (cont.) | Dark, damp places with decomposing organic matter; June-Nov., peak Jul., Sept.; 118 | Kamalow | 1934 |
| | ---; above 5,500 feet altitudes, suspected vector of Sandfly fever; 143 | Sinton | 1925 a |
| | ---; enters houses; 143 | Sinton | 1928 b |
| | ---; 151, 159, 302, 342. ---; enters houses, more common in mountains than plains; 174 | Adler & Theodor | 1929 |
| | ---; enters houses; 154 | Jacusiell | 1947 |
| | ---; implicated in the transmission of Kala-azar; 159 | Anonymous | 1944 |
| | ---; ---; 162 | Popov | 1929 |
| | ---; ---; 194* | Anonymous | 1946 |
| | ---; ---; 235 | Pringle | 1953 |
| | ---; dry places although chiefly associated with sea coasts; 256 | Dolmatova | 1949 |
| | Moist dark cellars and bathrooms; suspected vector of Kala-azar; 317 | Anonymous | 1944 a |
| | ---; 5000 to 7000 feet altitudes; 345 | Sinton | 1928 |
| <i>major</i> var. <i>chinensis</i> Newstead | ---; naturally infected with flagellates of <i>Leishmania</i> , experimental transmission of Kala-azar, May to July, bites at night; 76° | Patton & Hindle | 1927 |
| | ---; possible carrier of Kala-azar; 76 | Patton | 1926 |
| | ---; suspected vector of Sandfly fever; 143 | Sinton | 1925 a |
| | ---; ---; 194° | Patton & Hindle | 1928 |
| <i>major</i> var. <i>grisea</i> Annandale | ---; ---; 70, 143 | Sinton | 1924 a |
| <i>major</i> <i>longiductus</i> Parrot | ---; ---; 162 | Perfiliev | 1929 |
| | ---; July; 326 | Parrot | 1928 |

TABLE 1 -- SAND FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|-------------------------|--|--------------------------|--------|
| <i>PHLEBOTOMUS</i> | ---; ---; 162, 321, 345 | Popov | 1929 |
| <i>major</i> | | | |
| <i>perniciosus</i> | ---; ---; 256 | Terdechanian | 1929 |
| Newstead | ---; ---; 326 | Khodukin | 1927 |
| | ---; ---; 342 | Sinton | 1928 |
| <i>major</i> | ---; ---; 154, 302 | Pringle | 1953 |
| <i>syriacus</i> | | | |
| Adler & Theodor | ---; ---; 342 | Theodor | 1948 |
| <i>malabaricus</i> | ---; ---; 70, 349 | Sinton | 1924 a |
| Annandale | ---; large tree holes; 143 | Sinton | 1931 b |
| | ---; ---; 190 | Edwards | 1928 |
| <i>manganus</i> | ---; ---; 242 | Manalang | 1930 |
| Manalang | | | |
| <i>maris-mortui</i> | ---; overhanging rocks, caves; 154°, 159° | Theodor | 1947 |
| Theodor | ---; ---; 342 | Theodor | 1948 |
| <i>masceittii</i> | ---; ---; 31 | Sinton | 1928 |
| Grassi | ---; ---; 162 | Popov | 1929 |
| <i>maynei</i> | ---; enters houses, July; 143 | Sinton | 1930 |
| Sinton | | | |
| <i>minutus</i> | ---; ---; 35 | Perfil'ev & Gutzevich | 1935 |
| var. <i>arpaklensis</i> | | | |
| Perfil'ev | ---; ---; 318 | Sinton | 1933 |
| <i>minutus</i> | ---; bites at night; 2° | Smith & Loughnan | 1914 |
| Rondani | ---; dark places of houses and caves; 2 | Loughnan | 1913 |
| | ---; ---; 28 | Popoff | 1924 |
| | ---; ---; 31, 303 | Chodukin & Sofieff | 1931 |
| | ---; ---; 59 | Sinton | 1927 a |
| | ---; ---; 70, 349. ---; cowsheds and dwellings; 235 (Active all year) | Sinton | 1924 a |

TABLE 1 - SAND FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|--|-------------------|--------|
| <i>PHLEBOTOMUS</i> <i>minutus</i> Bondani (cont.) | ---; enters houses, infected with flagellate of <i>Hexpetomonas</i> , Feb.-March; 143 | Mackie | 1914 |
| | ---; on plains and mountains, suspected vector of Sandfly fever; 143. ---; vector and carrier of Sandfly fever; 151* | Sinton | 1925 a |
| | ---; ---; 143° | Lloyd & Napier | 1930 |
| | Moist cracks, crevices in ground; transmits the unknown parasite of Sandfly fever; 151° | Patton | 1920 |
| | ---; probably transmits Phlebotomus fever, suspected carrier of Oriental sore; 151 | Patton | 1919 |
| | ---; at light, Nov.; 151. ---; Aug.; 235 | Newstead | 1920 |
| | ---; ---; 151* | Patton | 1922 |
| | Cisterns; active at sunset; 154°. ---; large collection; 302 | Brunetti | 1913 |
| | ---; June and July; 154. ---; May; 342 | Buxton | 1924 |
| | ---; ---; 159, 174 | Adler & Theodor | 1929 |
| | ---; caves and ruins; 162 | Grebel'skii | 1939 |
| | ---; enters buildings by day, rests on walls near ceiling or roof, June-Aug., transmits Sandfly fever; 235* | Graham | 1915 |
| | ---; ---; 317 | Akalin | 1941 |
| | ---; ---; 326 | Perfil'ev | 1929 |
| | ---; common in rainy months; 349 | de Mello & Afonso | 1921 |
| <i>minutus</i> var. <i>africanus</i> Newstead | Cracks and crannies of basement walls; enters houses; 154° | Austen | 1921 |
| | ---; ---; 317, 342 | Austen | 1925 |
| <i>minutus</i> <i>antennatus</i> Newstead | ---; ---; 143 | Sinton | 1928 |
| | ---; enters houses; 235 | Sinton | 1922 |
| <i>minutus</i> <i>arpaklensis</i> Perfil'ev | ---; enters houses; 318 | Petrishcheva | 1936 |

TABLE 1 - SAND FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|---|----------------------|--------|
| <i>PHLEBOTOMUS</i> | | | |
| <i>minutus</i> | | | |
| var. <i>montanus</i> Sinton | ---; above 5,000 feet altitude; 143 | Sinton | 1924 a |
| <i>minutus</i> | ---; ---; 143 | Sinton | 1925 |
| var. <i>niger</i> Annandale | ---; ---; 154 | Adler & Theodor | 1927 |
| | ---; ---; 235 | Sinton | 1924 |
| <i>minutus</i> <i>sogdianus</i> Parrot | ---; ---; 318 | Orlowa & Schachow | 1930 |
| | ---; June, July; 326 | Parrot | 1928 |
| <i>mongolensis</i> Sinton | ---; ---; 76 | Theodor | 1948 |
| <i>montanus</i> Sinton | ---; above 5,000 feet altitude; 143 | Sinton | 1928 |
| <i>morini</i> Raynal & Gaschen | ---; April; 144 | Raynal & Gaschen | 1935 d |
| <i>neglectus</i> Tonnoir | ---; ---; 317 | Senevet & Parrot | 1922 |
| <i>neras</i> Quate | ---; tree buttress in primary forest, above 500 meters altitude; 242 | Quate | 1965 |
| <i>newsteadii</i> Sinton | ---; enters houses; 143 | Sinton | 1928 b |
| <i>nicot</i> Banks | Kitchen drains; bites at night; 242* | Banks | 1919 |
| | Tree holes; ---; 242 | Manalang | 1930 |
| | ---; Apr.-May, July; 242 | Manalang | 1930 a |
| <i>nifer</i> | ---; ---; 28 | Popoff | 1924 |
| <i>palestinensis</i> Adler & Theodor | ---; ---; 150, 342 | Theodor | 1948 |
| | ---; ---; 151, 159 | Adler & Theodor | 1929 |
| | ---; ---; 154 | Pringle | 1953 |

TABLE 1 - SAND FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--------------------|---|---------------------|--------|
| <i>PHLEBOTOMUS</i> | ---; ---; 3 | Sinton | 1925 |
| <i>papatasi</i> | ---; ---; 28 | Popoff | 1924 |
| <i>Scopoli</i> | ---; ---; 31 | Theodor | 1948 |
| | ---; ---; 70. ---; in cowsheds, seldom in dwellings, active all year; 235 | Sinton | 1924 a |
| | ---; experimentally infected with <i>L. donovani</i> ; 76, 143. ---; host of <i>Leishmania tropica</i> ; 342 | Adler & Theodor | 1930 |
| | ---; well-known carrier of "Papatasi" or "Sandfly" fever; 76 | Patton | 1926 |
| | Sides of reservoirs, thick vegetated soil protected from sun during dry season, paved floors; enters houses; 143° | Smith et al. | 1936 |
| | Pits; ---; 143 | McCombie Young | 1927 |
| | ---; suspected vector of Sandfly fever; 143. ---; experimental transmission of Sandfly fever; 345 | Sinton | 1925 a |
| | ---; huts, cattlesheds, dry plains, experimentally infected with Kala-azar; 143 | Napier & Smith | 1927 |
| | ---; naturally infected with <i>Leishmania tropica</i> ; 143 | Farooq & Qutubuddin | 1945 |
| | ---; experimentally infected with oriental sore; 143 | Koy & Brown | 1954 |
| | ---; carrier of Sandfly fever; 143 | Sinton | 1932 a |
| | ---; active morning and night; 150. ---; dry regions; 302 | Adler et al. | 1930 |
| | ---; bloodsucker; 150, 151°, 154, 159, 302 | Pringle | 1953 |
| | Moist cracks and crevices in the ground; Mar.-Dec.; 151° | Patton | 1920 |
| | ---; in houses along riverbank, experimentally infected with <i>Leishmania tropica</i> ; 151. ---; enters houses, naturally infected with and carrier of <i>L. tropica</i> ; 159°. ---; carrier of oriental sore; 302 | Adler & Theodor | 1929 |
| | ---; in houses, naturally infected with <i>Herpetomonas</i> , experimental transmission of cutaneous Leishmaniasis to man, artificially infected with <i>Herpetomonas tropica</i> from oriental sore, Apr.-Dec.; 151, 159, 342° | Adler & Theodor | 1926 |

TABLE 1 - SAND FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|------------------------|------|
| <i>PHLEBOTOMUS</i> <i>papatasi</i> Scopoli (cont.) | ---; vector of <i>Leishmania tropica</i> ; Sept.-Jan.; 151 | Mills et al. | 1930 |
| | ---; probably transmits Phlebotomus fever, suspected carrier of Oriental sore; 151 | Patton | 1919 |
| | ---; ---; 151*, 302* | Weyer & Zumpt | 1952 |
| | Cisterns; active at sunset, Oct.; 154*. ---; common; 302 | Brunetti | 1913 |
| | ---; transmits Sandfly fever, May to Oct.; 154*, 159*, 342* | Kligler | 1928 |
| | ---; June, July; 154, 342 | Buxtor | 1924 |
| | ---; bloodsuckers; 154 | Austen | 1921 |
| | ---; salt desert; 154 | Hertig & Fisher | 1945 |
| | ---; in houses; 154 | Jacusieli | 1947 |
| | ---; naturally and experimentally infected with <i>Leishmania tropica</i> ; 159*. ---; experimentally infected with <i>L. tropica</i> , vector of oriental sore; 342* | Adler & Ber | 1941 |
| | ---; ---; 162. ---; in houses; 326 | Perfiliev | 1929 |
| | ---; enters houses; 166 | Petrishcheva & Aluimov | 1940 |
| | ---; experimentally infected with dengue; 174 | Couvy | 1922 |
| | ---; enters buildings by day, rests on walls near ceiling or roof, June-Aug.; 235* | Graham | 1915 |
| | Small pit with water; abundant in houses; 256 | Yatsenko | 1929 |
| | Soil; ---; 256 | Livshits & Tarumov | 1942 |
| | ---; damp shady places with dense vegetation, cracks in floors, enters houses, avoids light and active in complete darkness, active June-Sept.; 256* | Kremer | 1930 |
| | ---; ---; 256* | Voinov et al. | 1936 |
| | ---; ---; 303* | Latushchov & Sochilova | 1936 |
| | ---; vector of sandfly fever and oriental sore; 317** | Anonymous | 1944 |
| | ---; indoors, active at sunrise and hottest part of day, Mar.-Oct.; 317 | Adelmann | 1919 |

TABLE 1 - SAND FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|------------------------|--|---------------------------|--------|
| <i>PHLEBOTOMUS</i> | ---; ---; 321 | Artemenko | 1945 |
| <i>papatasi</i> | --- | | |
| Scopoli | ---; ---; 326 | Sinton | 1928 |
| (cont.) | ---; naturally infected with cutaneous Leishmaniasis; 342 | Adler | 1926 |
| | ---; experimentally infected with <i>Leishmania tropica</i> ; 342 | Adler & Theodor | 1927 a |
| | ---; ---; 342 | Dubarry & Giraud-Costa | 1941 |
| <i>papatasi</i> | | | |
| var. <i>antennatus</i> | ---; ---; 70, 143 | Sinton | 1924 |
| Newstead | | | |
| <i>papatasi</i> | | | |
| var. <i>montanus</i> | ---; ---; 70, 143 | Sinton | 1924 a |
| Annandale | | | |
| <i>paportasi</i> | | | |
| var. <i>niger</i> | ---; ---; 70, 143 | Sinton | 1924 a |
| Sinton | | | |
| <i>pawlowsky</i> | ---; ---; 162 | Theodor | 1948 |
| Perfiljev | ---; ---; 318 | Perfiljev | 1933 |
| <i>perfiliewi</i> | ---; ---; 154 | Pringle | 1953 |
| Perrot | | | |
| <i>perfiliewi</i> | | | |
| <i>transcaucasius</i> | ---; ---; 35 | Theodor | 1948 |
| Perfil'ev | | | |
| <i>pernicius</i> | ---; ---; 28 | Popoff | 1924 |
| Newstead | ---; ---; 118* | Geigy & Herbig | 1955 |
| | ---; ---; 162 | Popov | 1926 a |
| | ---; ---; 256 | Popov | 1927 |
| | ---; May; 302 | Buxton | 1928 |
| | ---; ---; 317 | Akalin | 1941 |
| | ---; ---; 318 | Orlowa & Schachow | 1930 |
| | ---; ---; 321 | Nasomov | 1929 |
| | ---; ---; 326 | Khodukin | 1928 |
| | ---; experimentally infected with <i>Leishmania</i> <i>infantum</i> ; 342 | Adler & Ber | 1941 |
| | ---; suspected vector of Sandfly fever; 345 | Sinton | 1925 a |

TABLE 1 - SAND FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|-----------------------|---|------------------------|--------|
| <i>PHLEBOTOMUS</i> | | | |
| <i>perniciosus</i> | | | |
| var. <i>tauricus</i> | ---; ---; 256 | Nasonov | 1929 |
| Nasonov | | | |
| <i>perniciosus</i> | ---; ---; 118 | Parrot | 1934 |
| <i>tobbi</i> | | | |
| Adler, Theodor | ---; experimentally infected with <i>Leishmania donovani</i> , possible vector of Kala-azar; 150. ---; 154, 242 | Adler et al. | 1930 |
| & Laurie | | | |
| | ---; in dry places although associated with sea coasts; 256 | Dolmatova | 1949 |
| | ---; ---; 342 | Caminopetros | 1935 |
| <i>perturbans</i> | ---; ---; 70, 146. ---; active all year; 143 | Sinton | 1924 a |
| de Meijere | | | |
| | ---; May-Sept.; 76 | Patton & Hindle | 1927 |
| | ---; enters houses; 143 | Awati | 1922 |
| | ---; ---; 190 | Edwards | 1928 |
| <i>philippinensis</i> | ---; tree trunk, at light in cave; 242 | Quate | 1965 |
| Manalang | | | |
| <i>pholetor</i> | ---; limestone cave in mountain near coast; 242 | Quate | 1965 |
| Quate & Fairchild | | | |
| <i>pimemowi</i> | ---; ---; 28 | Burakova & Mirsayan | 1934 |
| Burakova & Mirsayan | | | |
| | ---; ---; 35, 118 | Perfil'ev & Gutsevich | 1935 |
| | ---; ---; 166 | Pogrishcheva & Aluimov | 1940 |
| <i>pooi</i> | ---; ---; 76 | Hsiao | 1945 |
| Yao & Wu | | | |
| <i>purii</i> | Tree holes in dense forest; ---; 143 | Sinton | 1931 c |
| Sinton | | | |
| <i>sejunotus</i> | ---; bat-inhabited caves; 242 | Quate | 1965 |
| Quate | | | |
| <i>selectus</i> | ---; ---; 326 | Khodukin | 1929 |
| Khodukin | | | |
| <i>sequens</i> | ---; in caves, rarely in houses; 256 | Perfil'ev | 1941 |
| Perfil'ev | | | |
| | ---; ---; 256 | Theodor | 1948 |

TABLE 1 - SAND FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|---------------------------|--------|
| <i>PHLEBOTOMUS sergenti</i> Parrot | ---; 31, 350 | Sinton | 1928 |
| | ---; ---; 35 | Popov | 1935 |
| | ---; ---; 70, 143. ---; in stables, indoors, July-Aug.; 235 | Sinton | 1924 a |
| | ---; May, Aug. and Sept.; 76* | Yuan | 1939 |
| | ---; experimentally infected with Kala-azar; 76 | Young & Hertig | 1929 |
| | Dark, damp places with decomposing matter; June-Nov.; 118 | Kamalow | 1934 |
| | ---; rare; 118 | Kamaloff | 1933 |
| | ---; suspected vector of Sandfly fever; 143. ---; enters houses; 150. ---; ---; 342. ---; possible vector of Sandfly fever; 345 | Sinton | 1925 a |
| | ---; vector of Oriental sore; 143* | Kirk & Lewis | 1955 |
| | ---; vector of <i>Leishmania tropica</i> ; 143* | Geigy & Herbig | 1955 |
| | ---; experimentally infected with Oriental sore; 143 | Roy & Brown | 1954 |
| | ---; enters houses, cracks in walls, dark holes; 150°. ---; ---; 350 | Adler et al. | 1930 |
| | ---; transmits oriental sore; 151*. ---; cave; 159. ---; probably transmits oriental sore, common; 302 | Theodor | 1947 |
| | ---; in houses, main carrier of <i>Leishmania tropica</i> ; 151°. ---; ---; 174. ---; carrier of oriental sore; 302 | Adler & Theodor | 1929 |
| | ---; ---; 154 | Pringle | 1953 |
| | ---; caves and ruins; 162 | Grebel'skii | 1939 |
| | ---; ---; 162 | Perfiliev | 1929 |
| | ---; enters houses; 166 | Petrishcheva & Aluimov | 1940 |
| | ---; ---; 302 (Vector of Sandfly fever, cutaneous <i>Leishmaniasis</i> , Kala-azar) | Anonymous | 1944 |
| | ---; ---; 303° | Shchurenkova | 1937 |
| | ---; ---; 317 | Akalin | 1941 |
| | Rodent burrows; ---; 318 | Petrishcheva & Gubar | 1949 |
| | ---; deep holes in mountains; 318 | Perfil'ev | 1932 |

TABLE 1 - SAND FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|-----------------------|---|----------------------|------|
| <i>PHLEBOTOMUS</i> | ---; ---; 321 | Artemenko | 1945 |
| <i>sergenti</i> | --- | | |
| Parrot | ---; July; 326 | Parrot | 1928 |
| (cont.) | | | |
| <i>sergenti</i> var. | ---; naturally infected with flagellates, possible vector of Kala-azar; 76* | Patton & Hirdle | 1927 |
| <i>sergenti</i> | ---; ---; 143, 303. ---; rare; 151 | Adler et al. | 1930 |
| <i>alexandri</i> | --- | | |
| Sinton | ---; ---; 235 | Sinton | 1928 |
| | Rodent burrows; ---; 318 | Petrishcheva & Gubar | 1949 |
| | --- | | |
| | ---; ---; 326 | Perfil'ev | 1929 |
| <i>sergenti</i> | | | |
| var. <i>lii</i> | ---; July; 326 | Parrot | 1928 |
| Popow | | | |
| <i>sergenti</i> | ---; ---; 31 | Chodukin & Sofieff | 1931 |
| <i>mongolensis</i> | | | |
| Sinton | Enters houses; experimentally infected with Kala-azar, May-Sept.; 76. ---; ---; 303, 318, 326 | Dicke & Hsiao | 1946 |
| | ---; experimental transmission of <i>Leishmania donovani</i> ; 76 | Hindle | 1931 |
| | ---; vector of <i>Leishmania donovani</i> ; 76** | Geigy & Herbig | 1955 |
| | ---; possible vector of <i>Leishmania</i> ; 76 | Hsiao | 1945 |
| | ---; experimentally infected with filariasis; 76 | Yao et al. | 1938 |
| | ---; ---; 194* | Anonymous | 1946 |
| | ---; ---; 194 | Barnett & Toshioka | 1951 |
| <i>shortii</i> | ---; ---; 59, 235 | Sinton | 1928 |
| Adler & Theodor | --- | | |
| | ---; ---; 76 | Patton | 1926 |
| | ---; among banana clumps; 143* | Smith et al. | 1936 |
| | --- | | |
| | ---; ---; 326 | Perfil'ev | 1931 |
| <i>silvestris</i> | --- | | |
| Sinton | ---; ---; 143 | Nitzulescu | 1930 |
| <i>simillimus</i> | --- | | |
| var. <i>hospittii</i> | ---; ---; 143 | Sinton | 1927 |
| Sinton | ---; enters houses, at 2,023 feet altitude; 235 | Sinton | 1924 |

TABLE 1 - SAND FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|--|----------------------------|--------|
| <i>PHLEBOTOMUS</i> | | | |
| <i>amirnovi</i> Perfiliev | ---; ---; 162 | Theodor | 1948 |
| <i>smithi</i> | ---; ---; 143 | Roy & Brown | 1954 |
| <i>sogdianus</i> Parrott | ---; ---; 162 | Theodor | 1948 |
| | ---; ---; 326 | Perfil'ev | 1931 |
| <i>spinifaucis</i> Quate | ---; tree buttress in disturbed forest near ocean at sea level; 242 | Quate | 1965 |
| <i>squamipleuris</i> Newstead | ---; ---; 31, 133 | Hsiao | 1945 |
| | ---; ---; 70, 235 | Sinton | 1924 a |
| | ---; attracted by artificial light, enters houses, July; 143 | Sinton | 1932 |
| | ---; sea level to 5,500 feet altitude; 143 | Sinton | 1923 |
| | ---; ---; 151 | Sinton | 1927 |
| | ---; electric lights in railway stations; 277 | Sinton | 1931 |
| | ---; ---; 277, 303, 318 (May bite man) | Dicke & Hsiao | 1946 |
| | ---; ---; 277 (Cool moist soil rich with decaying organic matter, enters houses) | Causey | 1938 |
| | ---; enters houses; 318 | Petrishcheva | 1936 |
| <i>squamirostris</i> Newstead | ---; May-Sept.; 76. ---; ---; 133, 158 (In houses) | Dicke & Hsiao | 1946 |
| | ---; experimentally infected with Kala-azar; 76 | Hindle | 1931 |
| | Tree holes; ---; 143 | Sinton | 1931 b |
| | ---; ---; 194 | Anonymous | 1946 |
| <i>stalinabadi</i> (Chodukin & Sofieff | ---; ---; 31, 326. ---; enters houses; 303 | Chodukin & Sofieff | 1931 |
| <i>stantoni</i> Newstead | ---; ---; 76, 133. ---; enters houses; 143, 190, 277. ---; enters houses, April-Dec.; 144 | Dicke & Hsiao | 1946 |
| | ---; plains, hilly regions; 144 | Gaschen & Nguyen-Nguyen | 1938 |
| | ---; common; 144 | Raynal & Gaschen | 1935 d |

TABLE 1 - SAND FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|----------------------------|--------|
| <i>PHLEBOTOMUS stellae</i> Quate | ---; ---; 242 | Quate | 1965 |
| <i>sumbaricus</i> Perfil'ev | ---; ---; 162 | Theodor | 1948 |
| | ---; enters houses; 166 | Petrishcheva & Aluimov | 1940 |
| | ---; enters houses; 318 | Petrishcheva | 1936 |
| <i>sylvaticus</i> Raynal & Gaschen | ---; Sept., Oct.; 144 | Raynal & Gaschen | 1935 c |
| <i>sylvestris</i> Sinton | ---; jungle and foothills; 59, 143 | Sinton | 1932 a |
| | ---; large tree holes; 143 | Sinton | 1931 b |
| | ---; Oct., Nov.; 144. ---; ---; 146, 366 | Raynal & Gaschen | 1935 a |
| | ---; plains, hilly regions; 144 | Gaschen & Nguyen-Nguyen | 1938 |
| <i>taianensis</i> Patton & Hindle | ---; ---; 76 | Nitzulescu | 1930 |
| <i>thapari</i> | ---; ---; 143 | Roy & Brown | 1954 |
| <i>tiberiadis</i> Adler, Theodor & Laurie | ---; ---; 154 | Pringle | 1953 |
| | ---; ---; 342 | Sinton | 1932 |
| <i>tobbi</i> Adler & Theodor | ---; ---; 150 | Theodor | 1948 |
| | ---; ---; 154 | Pringle | 1953 |
| <i>tonkinensis</i> Raynal & Gaschen | ---; Nov.; 144 | Raynal & Gaschen | 1935 |
| <i>torrechantei</i> Manalang | ---; ---; 242 | Manalang | 1931 |
| <i>tracheolus</i> Quate | ---; tree holes, tree buttresses in primary forest; 242 | Quate | 1965 |
| <i>venyoni</i> Adler & Theodor | ---; active from midnight to dawn, restricted to highlands; 150 | Adler et al. | 1930 |
| | ---; bloodsucker; 151 | Pringle | 1953 |
| | ---; ---; 162 | Theodor | 1948 |
| | ---; ---; 318 | Petrishcheva | 1935 |

TABLE 1 - SAND FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|---|----------|--------|
| <i>PHLEBOTOMUS</i> | | | |
| <i>yashimotoi</i> Quate | ---; tree buttresses; 242 | Quate | 1965 |
| <i>seylanicus</i> Annandale | ---; April-Aug. at 1500 feet elevation; 70 | Sinton | 1924 a |
| | ---; tree holes; 143 | Sinton | 1931 b |
| | ---; jungle, warm moist conditions; 143 | Sinton | 1932 a |
| <i>PSYCHODA</i> | | | |
| <i>alternata</i> Say | Stones of sewage filters; ---; 190 | Garter | 1929 |
| <i>b. punctata</i> Curtis | ---; ---; 158* | Okada | 1927 |
| <i>bengalensis</i> Brunetti | ---; ---; 59, 70. ---; common, plains; 143 | Brunetti | 1917 |
| <i>hirtipennis</i> Brunetti | ---; ---; 143 | Brunetti | 1917 |
| <i>nigripennis</i> Brunetti | ---; plains; 143 | Brunetti | 1917 |
| <i>SERGENTOMYIA</i> | | | |
| <i>babu</i> var. <i>insularis</i> Theodor | ---; ---; 70 | Theodor | 1948 |
| <i>dentata</i> <i>mediensis</i> Pringle | ---; ---; 151 | Pringle | 1953 |
| <i>fallax</i> (Parrot) | ---; ---; 154 | Pringle | 1953 |
| | ---; ---; 342 | Theodor | 1948 |
| <i>iyengari</i> var. <i>malayensis</i> Theodor | ---; ---; 190 | Theodor | 1948 |
| <i>koloshanensis</i> Yao & Wu | ---; ---; 76 | Theodor | 1948 |
| <i>mervynae</i> Pringle | ---; ---; 151 | Pringle | 1953 |
| <i>murgabiensis</i> Perfiliew | ---; ---; 162 | Theodor | 1948 |
| <i>punjabensis</i> Sinton | ---; ---; 143 | Theodor | 1948 |

TABLE 1 - SAND FLIES (conclusion)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|---------|------|
| <i>SERGENTOMYIA</i> | | | |
| <i>silvatica</i> Raynal & Gaschen | ---; ---; 144 | Theodor | 1948 |
| <i>sintoni</i> Pringle | ---; ---; 151 | Pringle | 1953 |
| <i>squamipleuris</i> var. <i>indica</i> Theodor | ---; ---; 143, 162 | Theodor | 1948 |
| <i>theodori</i> (Parrot) | ---; ---; 154, 174, 302 | Pringle | 1953 |
| | ---; ---; 342 | Theodor | 1948 |
| <i>theodori</i> <i>babylonica</i> Pringle | ---; ---; 151, 154, 159 | Pringle | 1953 |
| <i>TELMATOSCOPIUS</i> | Sewage tanks; ---; 190 | Garter | 1929 |
| <i>albipunctatus</i> Will. | ---; at light; 190 | Edwards | 1928 |

TABLE 2 - SUMMARY OF DISEASES OR DISEASE ORGANISMS TRANSMITTED BY SAND FLIES

| | DISEASE OR DISEASE ORGANISM | | | | | COUNTRY |
|--|--------------------------------|--------------------------------------|------------------|---------------|---|---|
| | : VIRUS & : RICKETTSIA : | : PROTOZOA : | : HELMINTHS : | : OTHER : | : | |
| <i>PHLEBOTOMUS</i> | | | | | | |
| <i>argentipes</i> Annandale & Brunetti | | Kala-azar | | | | 143 |
| <i>chinensis</i> Newstead | | Kala-azar | | | | 76 (Yuan 1939) |
| | | <i>Leishmania</i> <i>donovani</i> | | | | 76 |
| | Sand fly fever | | | | | 194 |
| <i>crimicus</i> Shtefko & Minkevich | Sand fly fever | | | | | 256 |
| <i>major</i> Annandale | Sand fly fever | | | | | 194 |
| <i>minutus</i> Rondani | | Oriental sore | | | | 151 (Patton 1922) |
| | Sand fly fever | | | | | 151 235 |
| <i>papatasi</i> Scopoli | | <i>Leishmania</i> <i>tropica</i> | | | | 159 |
| | | Oriental sore | | | | 151 317 (Anonymous 302 342 1944) |
| | Sand fly fever | | | | | 151 (Kligler 1928) 154 159 (Kligler 1928) 235 256 317 342 |
| <i>pernicius</i> Newstead | | | | "Khava fever" | | 118 (Kandelaki 1920) |
| | | <i>Leishmania</i> <i>tropica</i> | | | | 118 |
| <i>sergenti</i> Parrot | | Kala-azar | | | | 76 |
| | | <i>Leishmania</i> <i>tropica</i> | | | | 143 151 |
| | | Oriental sore | | | | 143 |

TABLE 2 - SAND FLIES (concluded)

| | DISEASE OR DISEASE ORGANISM | | | | | COUNTRY |
|--------------------|--------------------------------|--------------------|---------------------|-----------------|--|---------|
| | : VIRUS & : RICKETTSIA : | : PROTOZOA : | : HELMINTHS : | : OTHER : | | |
| PHLEBOTOMUS | | | | | | |
| <i>sergenti</i> | | <i>Leishmania</i> | | | | |
| <i>mongolensis</i> | | <i>donovani</i> | | | | 76 |
| Sinton | | | | | | |
| | Sand fly | | | | | |
| | fever | | | | | 194 |
| PSYCHODA | | | | | | |
| <i>b. punctata</i> | | | | <i>Myiasis</i> | | 158 |
| Curtis | | | | | | |

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D. MIDGES

The midges include representatives from the family Ceratopogonidae. In some areas the biting species, especially *Culicoides*, are called "sand flies". Little is known of the biology of individual species; however, the larvae are known to occur either in water or in moist terrestrial environments. Although quite important as pests, these biting midges are vectors for several disease organisms.

The tables include 272 species or subspecies, most of which are in the large genus *Culicoides*.

TABLE 1 - MIDGES

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY· DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|--|-----------|-------|
| <i>CERATOPOGON</i> | | | |
| <i>maculatus</i> (Shiraki) | ---; severely bites man in mountainous region; 77° | Tokunaga | 1937 |
| <i>okuni</i> de Meijere | ---; near mouth of river, bites by day, preferably in sunlight, periods of abundance irregular; 149° | Salm | 1914 |
| <i>shimai</i> Sasaki | ---; attacks by night; 158° | Tokunaga | 1937a |
| <i>stimulans</i> de Meijere | ---; near water, bites by day, preferably in sunlight, periods of abundance irregular; 149° | Salm | 1914 |
| <i>taiwanus</i> (Shiraki) | ---; houses at day time; 77* | Tokunaga | 1937 |
| <i>vexans</i> de Meijere | ---; near mouth of river, bites by day, preferably in sunlight, periods of abundance irregular; 149° | Salm | 1914 |
| <i>CULICOIDES</i> | | | |
| <i>actoni</i> Smith | ---; ---; 143° | Smith | 1929 |
| | ---; ---; 143 | Vargas | 1949 |
| | ---; collected from light traps, Sept., collected from slope of mountains, Aug.; 242 | Delfinado | 1961 |
| <i>albicans</i> (Winnertz) | ---; ---; 101. Wet soil, sphagnum morras; ---; 256. ---; ---; 366 | Gutzevich | 1960 |
| | ---; ---; 194 | Takahasi | 1941 |
| <i>albifascia</i> Tokunaga | ---; in mountains; 77 | Tokunaga | 1937 |
| | ---; ---; 158 | Tokunaga | 1940 |
| <i>albibasis</i> Wirth & Hubert | ---; carabao-baited trap, Jan., Aug., Nov.-Dec., light trap, Oct.; 242 | Delfinado | 1961 |
| <i>albihalter</i> <i>nitreipennis</i> Austen | ---; ---; 342 | Vargas | 1949 |
| <i>albipennis</i> Smith & Swaminath | ---; ---; 143 | Vargas | 1949 |
| <i>alboguttatus</i> Kieffer | ---; ---; 77 | Kieffer | 1921 |
| <i>albonotatus</i> Kieffer | ---; ---; 342, 350 | Vargas | 1949 |
| <i>albosignatus</i> Vimmer | ---; ---; 342 | Vargas | 1949 |

TABLE 1 - MIDGES (continued).

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|--|--------------------|------|
| <i>CULICOIDES</i> <i>unaniensis</i> Tokunaga | ---; troublesome, bites man in evenings; 158*°, 257° | Tokunaga | 1937 |
| | ---; ---; 194 | Vargas | 1949 |
| <i>andrewsi</i> Causey | ---; light traps; 277 | Causey | 1938 |
| <i>anophelis</i> Edwards | ---; ---; 143, 149, 190. Water in leaf axils of <i>Colocasia indica</i> ; Sept.; 146 | Johannsen | 1931 |
| | ---; feeds on <i>Anopheles hyrcanus</i> ; 144 | Gutzevich | 1960 |
| | ---; ---; 277 | Causey | 1938 |
| <i>anophelis</i> <i>ferox</i> (Lalor) | ---; ---; 143, 190 | Vargas | 1949 |
| <i>anophelis</i> var. <i>flavescens</i> Macfie | ---; ---; 190 | Vargas | 1949 |
| <i>arakawai</i> (Arakawa) | ---; ---; 76, 77, 150, 168 (Attacks man) | Barnett & Toshioka | 1951 |
| | ---; collected from light trap, May, Sept.; 242 | Delfinado | 1961 |
| | ---; ---; 256° | Gutzevich | 1960 |
| <i>arakawae</i> (Matsumura) | Dung of fowls; ---; 158 | Tokunaga | 1937 |
| <i>arboreus</i> Gutzevich | Tree holes; ---; 256 | Gutzevich | 1960 |
| <i>arcuatus</i> (Winnertz) | Fresh water ponds; ---; 158 | Tokunaga | 1937 |
| | ---; ---; 194 | Vargas | 1949 |
| | ---; ---; 256 | Fraser | 1920 |
| <i>arcuatus</i> var. <i>no. 1</i> | ---; ---; 194 | Tokunaga | 1941 |
| <i>arcuatus</i> var. <i>nigrus</i> Takunaja | ---; ---; 194 | Vargas | 1949 |
| <i>assamensis</i> Smith & Swaminath | ---; ---; 143 | Vargas | 1949 |

TABLE 1 - MIDGES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|--|---------------------|--------------|
| <i>CULICOIDES</i> <i>assimilis</i> Delfinado | ---; carabao-baited trap, July, Oct., light traps, May, Sept.; 242 | Delfinado | 1961 |
| <i>aterinerois</i> Tokunaga | ---; mountainous region, enters houses; 158° | Tokunaga | 1937 |
| <i>aurantiacus</i> Kieffer | ---; ---; 275 | Vargas | 1949 |
| <i>baisasi</i> Wirth & Hubert | ---; carabao-baited trap, Jan., May, Nov., light trap, Jan., Oct., Dec.; 242 | Delfinado | 1961 |
| <i>barnetti</i> Wirth & Hubert | ---; carabao-baited trap, Nov., Dec., light trap, May, Sept.; 242 | Delfinado | 1961 |
| <i>biarcuatus</i> Vimmer | ---; ---; 342 | Vargas | 1949 |
| <i>bimaoulicosta</i> Floch & Abonnec | ---; ---; 143° | Smith | 1929 |
| <i>bipunctatus</i> Vimmer | ---; ---; 342 | Vargas | 1949 |
| <i>biscapus</i> Kieffer | ---; ---; 144° ---; ---; 144 | Kieffer Vargas | 1925 1949 |
| <i>bisulcatus</i> Gutsevich | ---; ---; 256 | Gutsevich | 1960 |
| <i>bodenheimeri</i> Vimmer | ---; ---; 342 | Vargas | 1949 |
| <i>boophagus</i> Macfie | ---; ---; 190 ---; Sept.; 242 | Vargas Delfinado | 1949 1961 |
| <i>brevimanus</i> Kieffer | ---; ---; 337 | Vargas | 1949 |
| <i>brevipalpis</i> Delfinado | ---; from light traps, Sept.; 242 | Delfinado | 1961 |
| <i>bubalus</i> Delfinado | ---; carabao-baited trap, Aug.; 242 | Delfinado | 1961 |

TABLE 1 - MIDGES (continued).

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|--|-----------------------|------|
| <i>CULICOIDES</i> | | | |
| <i>buckleyi</i> Macfie | ---; ---; 190 | Vargas | 1949 |
| <i>buhetoensis</i> Takahasi | ---; active in cold evening; 194° | Takahasi | 1941 |
| | ---; ---; 194 | Vargas | 1949 |
| <i>carjalaensis</i> Gluchova | ---; ---; 256 | Gutzevich | 1960 |
| <i>caspius</i> Gutzevich | ---; ---; 256 | Gutzevich | 1960 |
| <i>chaetophthalmus</i> Amosova | ---; ---; 256 (Bites man) | Gutzevich | 1960 |
| <i>chisphorus</i> Mergin | ---; ---; 162. Rotten mushrooms, dried cow dung in the field; ---; 256 (Bites man in some areas) | Gutzevich | 1960 |
| | ---; ---; 194 | Takahasi | 1941 |
| <i>circumscriptus</i> Kieffer | ---; ---; 76, 77, 158, 168 (Salt marshes and salt lakes) | Barnett & Toshioka | 1951 |
| | ---; ---; 101. Dirty small ponds without plants; ---; 256. ---; ---; 345 | Gutzevich | 1960 |
| | ---; in lighted tent at night; 154 | Austen | 1921 |
| | Small salt water pools of rocky seashore; ---; 158, 342, 350 | Tokunaga | 1937 |
| <i>circumscriptus</i> <i>albonotatus</i> Vimmer | ---; ---; 342 | Vargas | 1949 |
| <i>circumscriptus</i> <i>nadayanus</i> Kieffer | ---; ---; 350 | Vargas | 1949 |
| <i>circumscriptus</i> var. <i>piotidovaeum</i> Kieffer | ---; ---; 256 | Gutzevich | 1960 |
| <i>circumscriptus</i> <i>polymaculatus</i> Vimmer | ---; ---; 342 | Vargas | 1949 |
| <i>clavipalpis</i> Mukerji | ---; cowsheds; 143 | Mukerji | 1931 |
| | ---; from light trap, Sept.; 242 | Delfinado | 1941 |
| | ---; collected from light traps; 277 | Causey | 1938 |

TABLE 1 - MIDGES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---------------------------------------|---|-----------|------|
| <i>CULICOIDES</i> | | | |
| <i>cordiformis</i> Kieffer | ---; ---; 101 | Vargas | 1949 |
| <i>cordiger</i> Macfie | ---; ---; 190 | Vargas | 1949 |
| | ---; April-May; 242 | Delfinado | 1961 |
| <i>sorti</i> Causey | ---; from light traps; 277 | Causey | 1938 |
| <i>crassipilosus</i> Tokunaga | ---; ---; 158 | Vargas | 1949 |
| <i>cubitalis</i> Edwards | ---; ---; 101, 150, 256, 321, 340, 345 (Appeared late in the summer, bites man) | Gutzevich | 1960 |
| <i>cunctans</i> Winnertz | ---; ---; 101, 256, 336 | Gutzevich | 1960 |
| <i>daleki</i> Smith & Swaminath | ---; ---; 143, 190, 277 | Vargas | 1949 |
| <i>damnosus</i> Delfinado | ---; March; 242* | Delfinado | 1961 |
| <i>dendrophilus</i> Amosova | Tree holes; ---; 256, 321 | Gutzevich | 1960 |
| <i>dermeadi</i> Causey | ---; ---; 277 | Vargas | 1949 |
| <i>desertorum</i> Gutzevich | ---; ---; 318 | Gutzevich | 1960 |
| <i>desulfi</i> Goetghebuer | Dried cow dung; ---; 101 | Gutzevich | 1960 |
| <i>duodenarius</i> Kieffer | ---; ---; 77 | Vargas | 1949 |
| | ---; ---; 158 | Tokunaga | 1940 |
| <i>effusus</i> Delfinado | ---; carabao-baited trap, March, July-Sept., at sea level, Oct. 3300 feet altitude at light, Sept.; 242 | Delfinado | 1961 |
| <i>ejeroittoi</i> Delfinado | ---; near sea level, March-April; 242 | Delfinado | 1961 |
| <i>epactius</i> Arnaud | ---; ---; 158 | Gutzevich | 1960 |

TABLE 1 - MIDGES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|----------------------|--|--------------------|------|
| <i>CULICOIDES</i> | --- | | |
| <i>erairai</i> | ---; ---; 76 | Gutzevich | 1960 |
| Kono & Takahasi | ---; active in the evening; 158°, 194° | Takahasi | 1941 |
| | ---; ---; 158, 194 (Attacks man out-of-doors) | Barnatt & Toshioka | 1951 |
| | ---; ---; 256 | Tokunaga | 1940 |
| <i>esmoneti</i> | ---; on the shore and near running water, attracted to light at night; 146 | Salm | 1918 |
| <i>fagineus</i> | ---; ---; 118, 158. Tree holes; ---; 256 | Gutzevich | 1960 |
| Edwards | | | |
| <i>fascipennis</i> | ---; ---; 101 | Vargas | 1949 |
| (Staeger) | Small reservoir, wet soil on glade, drains and ditches; July-Sept.; 256°, 294° | Gutzevich | 1960 |
| <i>fascipennis</i> | | | |
| <i>albonotatus</i> | ---; ---; 350 | Vargas | 1949 |
| Kieffer | | | |
| <i>ferox</i> | ---; ---; 143, 190 | Vargas | 1949 |
| (Lalor) | | | |
| <i>firusae</i> | ---; ---; 35 | Gutzevich | 1960 |
| Dzhafarov | | | |
| <i>flavescens</i> | ---; ---; 190 | Vargas | 1949 |
| Macfie | ---; carabao-baited trap, Jan.; 242 | Delfinado | 1961 |
| <i>flavidus</i> | ---; ---; 35, 101, 118 | Gutzevich | 1960 |
| <i>flavipes</i> | ---; ---; 342 | Vargas | 1949 |
| Vimmer | | | |
| <i>flavirostris</i> | ---; ---; 342 | Vargas | 1949 |
| Vimmer | | | |
| <i>flaviscutatus</i> | ---; 6000 feet altitude, Nov., light trap, Sept., carabao-baited trap, Nov.; 242 | Delfinado | 1961 |
| Wirth & Hubert | | | |
| <i>flumineus</i> | ---; ---; 190 | Vargas | 1949 |
| Macfie | | | |
| <i>formosae</i> | ---; ---; 77 | Vargas | 1949 |
| Kieffer | ---; ---; 158 | Tokunaga | 1940 |

TABLE 1 - MIDGES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|--|---------------------|------|
| <i>CULICOIDES</i> | | | |
| <i>fulvithorax</i> (Austen) | ---; ---; 143° | Smith & Swanmath | 1932 |
| <i>furens</i> var. <i>maculithorax</i> Williston | ---; ---; 143 | Kieffer | 1925 |
| <i>gemellus</i> Macfie | ---; ---; 145 | Vargas | 1949 |
| | ---; carabao-baited trap, at night, Jan., May, Aug., Nov., Dec.; 242 | Delfinado | 1961 |
| <i>geminus</i> Macfie | ---; ---; 190 | Vargas | 1949 |
| <i>gentilis</i> Macfie | ---; ---; 190 | Vargas | 1949 |
| <i>grahami</i> Austen | ---; ---; 256 | Gutzevich | 1960 |
| <i>gewertzi</i> Causey | ---; ---; 277 | Vargas | 1949 |
| <i>griseolens</i> Edwards | Reservoir, wet soil, forest dirt road and trail, deforested area; Targa Landscape; 294° | Gutzevich | 1960 |
| <i>griseovittatus</i> Vimmer | ---; ---; 342 | Vargas | 1949 |
| <i>guttifer</i> de Meijere | ---; ---; 146. Tree holes; ---; 149 | Johannsen | 1931 |
| | Small shady muddy pools; ---; 190 | Edwards | 1922 |
| | ---; from light traps, May; 242 | Delfinado | 1961 |
| | ---; in houses; 277 | Causey | 1938 |
| <i>guttularis</i> Kieffer | ---; in lighted tent at night; 154 | Austen | 1921 |
| | ---; ---; 317, 342 | Austen | 1925 |
| <i>gymnopterus</i> Edwards | ---; in mountains, 2000, 3000, 7000 feet; 145 | Edwards | 1926 |
| | ---; ---; 242 | Edwards | 1929 |
| <i>halophilus</i> Kieffer | ---; ---; 118, 173, 256, 303 | Gutzevich | 1960 |
| <i>hegneri</i> Causey | ---; from light traps, May, Sept. and Dec.; 242 | Delfinado | 1961 |
| | ---; collected from light traps; 277 | Causey | 1938 |

TABLE 1 - MIDGES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|-----------------------|------|
| <i>CULICOIDES</i> <i>heliophilus</i> Edwards | ---; ---; 101. Swamps sphagnum; active by day and to bright lights; 256° | Gutzevich | 1960 |
| <i>hewitti</i> Causey | ---; ---; 277 | Vargas | 1949 |
| <i>himalayae</i> Kieffer | ---, bite of venomous nature; 218° | Mukerji | 1931 |
| <i>hirtipennis</i> Delfinado | ---; at 1500 feet elevation, Jan.; 242 | Delfinado | 1961 |
| <i>homotomus</i> Kieffer | ---; ---; 76, 158 | Gutzevich | 1960 |
| | ---; ---; 77 | Vargas | 1949 |
| <i>homotomus</i> <i>nubeculosus</i> Tokunaga | ---; ---; 158, 194 | Vargas | 1949 |
| <i>homotomus</i> <i>osakensis</i> Iwata | ---; ---; 158 | Vargas | 1949 |
| <i>housei</i> Causey | ---; from light traps; 277 | Causey | 1938 |
| <i>huxfi</i> Causey | ---; from light trap, Sept. and Dec.; 242 | Delfinado | 1961 |
| | ---; from light traps; 277 | Causey | 1938 |
| <i>humeralis</i> Okada | ---; ---; 256° | Gutzevich | 1960 |
| <i>I</i> Tokunaga | ---; ---; 194 | Vargas | 1949 |
| <i>impunctatus</i> Goetghbuwer | ---; ---; 194° | Barnett & Toshioka | 1951 |
| | Swamps, underzone mixed forest; June; 256° | Gutzevich | 1960 |
| <i>impunctatus</i> var. <i>minor</i> Tokunaga | ---; ---; 194 | Vargas | 1949 |
| <i>indecora</i> Kieffer | ---; ---; 77 | Vargas | 1949 |
| | ---; ---; 158 | Tokunaga | 1940 |

TABLE 1 - MIDGES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|----------------------|--------------|
| <i>CULICOIDES</i> | | | |
| <i>infulatus</i> Delfinado | ---; near sea level; Oct. and Nov.; 242 | Delfinado | 1961 |
| <i>inornatipennis</i> Carter, Ingram & Macfie | ---; ---; 280 | Johannsen | 1931 |
| <i>insignipennis</i> Macfie | ---; ---; 190 ---; carabao-baited trap, Dec.; 242 | Vargas Delfinado | 1949 1961 |
| <i>jacobsoni</i> Macfie | ---; ---; 149 ---; Oct.; 242 | Vargas Delfinado | 1949 1961 |
| <i>javanicus</i> Salm | ---; on the shore of a river, attracted to artificial light; 146 | Salm | 1918 |
| <i>judaee</i> Macfie | ---; ---; 342 | Vargas | 1949 |
| <i>judicandus</i> Bezzi | Mountain streams; most abundant at rainfall; 242° ---; ---; 242 | Banks Vargas | 1919 1949 |
| <i>kagiensis</i> Tokunaga | ---; in house by night; 77 ---; ---; 156 | Tokunaga Tokunaga | 1937 1940 |
| <i>kibunensis</i> Tokunaga | ---; rapid stream; 158 ---; ---; 194 | Tokunaga Vargas | 1937 1949 |
| <i>kiefferi</i> Patton | Eggs laid in mass in the vicinity of water with algal growth; Nov.-Apr.; 143° ---; ---; 143 | Patton Vargas | 1913 1949 |
| <i>K II</i> Tokunaga | ---; ---; 158 | Vargas | 1949 |
| <i>klossi</i> Edwards | ---; ---; 145 | Vargas | 1949 |
| <i>koreensis</i> Arnaud | ---; ---; 168. Pools; ---; 256 | Gutzevich | 1960 |
| <i>kurensis</i> Dzhafarov | ---; ---; 35, 326 | Gutzevich | 1960 |
| <i>kyotoensis</i> Tokunaga | ---; ---; 158 | Tokunaga | 1937 |

TABLE 1 - MIDGES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|-----------------------|------|
| <i>CULICOIDES</i> | | | |
| <i>litoreus</i> Amosova | ---; alkaline pool; 256 | Gutzevich | 1960 |
| <i>longipalpis</i> Delfinado | ---; at 3300 feet altitude, Sept.; 242 | Delfinado | 1961 |
| <i>luteosignatus</i> Vimmer | ---; ---; 342 | Vargas | 1949 |
| <i>macdowellii</i> Delfinado | ---; sea level, March and April; 242 | Delfinado | 1961 |
| <i>macfieii</i> Causey | ---; ---; 277 | Vargas | 1949 |
| <i>macrostoma</i> Kieffer | ---; probable vector of Kala-azar; 143 | Fletcher | 1924 |
| | ---; ---; 143° | Christophers et al | 1925 |
| | ---; ---; 337 | Vargas | 1949 |
| <i>maculatus</i> (Shiraki) | ---; May-Sept., mountainous regions; 77°. | Tokunaga | 1937 |
| | ---; ---; 158* | | |
| | ---; ---; 77 | Vargas | 1949 |
| <i>maculatus</i> <i>tainana</i> Kieffer | ---; ---; 77 | Vargas | 1949 |
| <i>maculipennis</i> (Macfie) | ---; ---; 190 | Vargas | 1949 |
| <i>malayi</i> Macfie | ---; ---; 190 | Macfie | 1937 |
| | ---; at light, Dec.; 242 | Delfinado | 1961 |
| <i>manohuriensis</i> Tokunaga | ---; ---; 194 | Tokunaga | 1941 |
| <i>marginatus</i> Delfinado | ---; from light traps and near sea level, May, Oct., Dec.; 242 | Delfinado | 1961 |
| <i>maritimus</i> Kieffer | Alkaline reservoir; ---; 256 | Gutzevich | 1960 |
| <i>matswai</i> Tokunaga | ---; ---; 158 | Gutzevich | 1960 |
| <i>mesopotamiensis</i> Patton | Algae in pools, streams, and creeks; along river banks and creeks; 151 | Patton | 1920 |

TABLE 1 - MIDGES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|-------------------------------------|--|--------------------|------|
| <i>CULICOIDES</i> | | | |
| <i>micromaculatus</i> Vimmer | ---; ---; 342 | Vargas | 1949 |
| <i>miharai</i> Kinoshita | ---; bloodsucking; 158° | Tokunaga | 1940 |
| | ---; ---; 158. Muddy tidal flat along coast; in houses in the evening, June, Aug.-Sept.; 168 | Tokunaga | 1937 |
| | ---; active in the evening, Apr.-Aug., Oct.-Nov.; 168 | Hsiao | 1948 |
| | ---; biting most intense during early evening hours, cause intense itching; 168° | Barnett & Toshioka | 1951 |
| | ---; seashore, riverside, attacks man towards evening; 168 | Kinoshita | 1918 |
| | ---; ---; 168 | Vargas | 1949 |
| <i>mihensis</i> Arnaud | ---; ---; 158 | Gutzevich | 1960 |
| <i>minutissimus</i> Zetterstedt | ---; ---; 342 | Goetghebuer | 1934 |
| <i>montivagus</i> Kieffer | ---; ---; 143 | Brunetti | 1917 |
| | ---; ---; 337 | Vargas | 1949 |
| <i>moristae</i> Tokunaga | ---; ---; 76 | Barnett & Toshioka | 1951 |
| <i>mystacinus</i> Vimmer | ---; ---; 342 | Vargas | 1949 |
| <i>madayanus</i> Kieffer | ---; ---; 350 | Vargas | 1949 |
| <i>newsteadi</i> Austen | ---; in lighted tent at night; 154° | Austen | 1921 |
| <i>nigroannulata</i> Goetghebuer | ---; ---; 337 | Vargas | 1949 |
| <i>nigrus</i> Tokunaga | ---; ---; 194 | Vargas | 1949 |
| <i>nitens</i> Edwards | ---; ---; 145 | Vargas | 1949 |
| <i>nitidulus</i> Kieffer | ---; ---; 337 | Vargas | 1949 |

TABLE 1 - MIDGES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|---|--------------------|------|
| <i>CULICOIDES</i> | | | |
| <i>notatus</i> Delfinado | ---; collected near sea level, Oct.; 242 | Delfinado | 1961 |
| <i>nubeculosus</i> (Meigen) | ---; ---; 76, 77, 158, 194, 210. (Salt marshes, bites man in early morning, night and on calm, cloudy days) | Barnett & Toshioka | 1951 |
| | ---; ---; 151, 317 | Austen | 1925 |
| | ---; ---; 158* | Tokunaga | 1937 |
| | ---; bites during day or at dusk causing painful swellings; 194° | Anonymous | 1946 |
| | Underzone of mixed forest, ditch, pond; ---; 256. ---; ---; 321 | Gutzevich | 1960 |
| <i>nubeculoeus</i> var. no. 1 Meigen | ---; ---; 194, 210 | Tokunaga | 1940 |
| <i>nudipalpis</i> Delfinado | ---; carabao-baited trap, March, from light traps, May, Sept.; 242 | Delfinado | 1961 |
| <i>obsoletus</i> Meigen | ---; ---; 101, 118. Wet soil, rotten leaves and mushrooms; forest landscape; 256 | Gutzevich | 1960 |
| | Decaying fungi, sheep dung; troublesome; 158* , 256 | Tokunaga | 1937 |
| | ---; bite might produce a large swelling, reddish in color and accompanied by an edema, disagreeable inflammation and severe irritation; 158°, 256° | Kono & Takahasi | 1940 |
| | ---; ---; 158, 194 | Tokunaga | 1941 |
| | ---; bites during day or at dusk causing painful swellings; 194° | Anonymous | 1946 |
| <i>obsoletus</i> <i>pygobius</i> Kieffer | ---; ---; 158 | Vargas | 1949 |
| <i>obsoletus</i> <i>yessoensis</i> (Matsumura) | ---; ---; 158 | Vargas | 1949 |
| <i>ediatue</i> Austen | ---; in lighted tent at night; 154, 342 | Austen | 1921 |

TABLE 1 - MIDGES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|--|-------------------|------|
| <i>CULICOIDES</i> <i>odibilis</i> Austen | ---; ---; 101, 118, 256, 345. (Bites man) Small reservoir, wet soil and marshland; ---; 256 | Gutzevich | 1960 |
| | ---; in lighted tent at night; 154 | Austen | 1921 |
| | ---; June-July; 256° | Olenev | 1945 |
| <i>okumensis</i> Arnaud | ---; ---; 256, 257 | Gutzevich | 1960 |
| <i>omogensis</i> Arnaud | ---; ---; 158, 256 | Gutzevich | 1960 |
| <i>onoï</i> Tokunaga | ---; ---; 194 | Tokunaga | 1941 |
| <i>opacus</i> Kieffer | ---; ---; 337 | Vargas | 1949 |
| <i>orientalis</i> Macfie | ---; ---; 143, 146, 190, 277 | Vargas | 1949 |
| | ---; carabao-baited traps, Aug., Oct., light traps, Sept.; 242 | Delfinado | 1961 |
| <i>osakensis</i> Iwata | ---; ---; 158 | Vargas | 1949 |
| <i>oxystoma</i> Kieffer | ---; in houses in the evenings; 76, 143, 158, 190 | Tokunaga | 1937 |
| | Sluggish drain water, algae of overflowed well water; rests on wall near host; 143° | Patel | 1921 |
| | ---; probable vector of Kala-azar; 143 | Fletcher | 1924 |
| | ---; very common; 143 | Smith & Swaminath | 1932 |
| | ---; ---; 242 | Edwards | 1929 |
| | ---; ---; 277 | Causey | 1938 |
| | ---; ---; 326 (Attacks man) | Gutzevich | 1960 |
| <i>palawanensis</i> Delfinado | ---; collected near sea level, March; 242 | Delfinado | 1961 |
| <i>pallidicornis</i> Kieffer | Wet soil in marsh forest; underzone of mixed forests, July-Aug.; 256. ---; ---; 294 | Gutzevich | 1960 |
| <i>palpifer</i> das Gupta & Gosh | ---; carabao-baited trap-May, July, near sea level, Oct., light trap, Sept., May; 242 | Delfinado | 1961 |
| <i>pampangensis</i> Delfinado | ---; from light traps, May and Sept.; 242 | Delfinado | 1961 |

TABLE 1 - MIDGES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|--|--------------------|------|
| <i>CULICOIDES</i> <i>parroti</i> Kieffer | Small ponds with water plants; ---; 35, 256, 303, 317, 345 | Gutzevich | 1960 |
| <i>pattoni</i> Kieffer | ---; Dec.-Feb.; 122 | de Mello & Afonso | 1921 |
| | ---; ---; 143 | Vargas | 1949 |
| <i>pegobius</i> Kieffer | ---; ---; 158, 256 | Kono & Takahasi | 1940 |
| <i>peliliouensis</i> Tokunaga | ---; ---; 158 | Tokunaga | 1940 |
| <i>peregrinus</i> Kieffer | ---; ---; 76. ---; infected with filarial larvae; 277 | Barnett & Toshioka | 1951 |
| | ---; enters houses; 77. Small, shady, muddy pools; ---; 190 | Tokunaga | 1937 |
| | Small pools near edge of lake; ---; 143 | Annandale & Kemp | 1916 |
| | ---; at night in corner of rooms, particularly near lighted lamp; 143 ^a | Mukerji | 1931 |
| | In ricefield, near lakes; ---; 149 | Johannsen | 1931 |
| | ---; ---; 158 | Tokunaga | 1940 |
| | ---; carabao-baited trap, May, July, Aug., light trap, Jan.; 242 | Delfinado | 1961 |
| | ---; in houses; 277 | Vargas | 1949 |
| <i>peregrinus</i> var. <i>asamanensis</i> Smith & Swaminath | ---; ---; 143 | Vargas | 1949 |
| <i>peregrinus</i> <i>semoneti</i> Sala | ---; ---; 146 | Vargas | 1949 |
| <i>perornatus</i> Delfinado | ---; near sea level, Oct.; 242 | Delfinado | 1961 |
| <i>philippinensis</i> Kieffer | ---; ---; 242 | Vargas | 1949 |
| <i>piotipennis</i> (Staeger) | ---; ---; 101, 256, 321, 345 (Bites man) | Gutzevich | 1960 |

TABLE 1 - MIDGES (continued).

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|--|-----------------------|------|
| <i>CULICOIDES</i> <i>piotipennis</i> <i>arcuatus</i> var. <i>nigrus</i> Tokunaga | ---; ---; 194 | Vargas | 1949 |
| <i>poeciloptera</i> | ---; ---; 143° | Smith | 1929 |
| <i>polymaculatus</i> Vimmer | ---; ---; 342 | Vargas | 1949 |
| <i>ponkikiri</i> Kono & Takahasi | ---; ---; 158, 256 | Tokunaga | 1940 |
| <i>praesignis</i> Delfinado | ---; near sea level, Oct.; 242 | Delfinado | 1961 |
| <i>pulicaris</i> (Linnaeus) | Damp areas, in decaying vegetation and manure heaps; ---; 158 | Tokunaga | 1937 |
| | ---; ---; 158, 168, 194, 210, 256. (Attacks man out of doors in evening) | Barnett & Toshioka | 1951 |
| | ---; bites during day and at dusk causing painful swellings; 194° | Anonymous | 1946 |
| | Fresh water pond with water plants, wet ground; active in summer and autumn, mixed forest; 256° | Gutzevich | 1960 |
| <i>pulicaris</i> var. <i>ocellaris</i> Kieffer | ---; ---; 158 | Tokunaga | 1940 |
| | ---; ---; 194 | Tokunaga | 1941 |
| | ---; ---; 210 | Haiaso | 1946 |
| <i>pulicaris</i> <i>punctatus</i> Haigen | ---; most active in the evening outdoors, inactive indoors; 158, 194 | Takahasi | 1941 |
| | ---; very troublesome, active out of doors in the evening; 194° | Haiaso | 1946 |
| <i>pulicaris</i> <i>cameratus</i> Kono & Takahasi | ---; ---; 158 | Vargas | 1949 |
| <i>pumilus</i> (Winnertz) | ---; ---; 101, 121 | Gutzevich | 1960 |

TABLE 1 - MIDGES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|---|-------------|-------|
| <i>CULICOIDES</i> | | | |
| <i>pungens</i> de Meijere | ---; attracted to lamp at altitude of 1,500 meters, near water, usually bites by day, preferably in full sun, periods of abundance irregular; 146°, 149° | Salm | 1914 |
| | ---; ---; 149 | Johannsen | 1931 |
| | ---; ---; 190°, 337 | Vargas | 1949 |
| | ---; March; 242 | Delfinado | 1961 |
| <i>pungens</i> <i>cotoni</i> Smith | ---; ---; 143 | Vargas | 1949 |
| <i>puncticollis</i> Becker | ---; ---; 28, 318, 326. Small temporary ponds; ---; 35 | Gutzevich | 1960 |
| <i>puncticollis</i> <i>flavitaris</i> Vimmer | ---; ---; 342 | Vargas | 1949 |
| <i>puncticollis</i> <i>vaurai</i> Vimmer | ---; ---; 342 | Vargas | 1949 |
| <i>puripennis</i> Austen | ---; enters houses; 154, 342 | Auster | 1921 |
| <i>quadrilobatus</i> Kieffer | ---; ---; 143 | Mukerji | 1931 |
| | ---; ---; 337 | Vargas | 1949 |
| <i>quadripunctatus</i> Goetghebuer | ---; ---; 256 | Goetghebuer | 1934a |
| <i>quadrivittatus</i> Vimmer | ---; ---; 342 | Vargas | 1949 |
| <i>quinquemaculatus</i> Vimmer | ---; ---; 342 | Vargas | 1949 |
| <i>radiatus</i> Delfinado | ---; from light traps, May and Sept.; 242 | Delfinado | 1961 |
| <i>raripalpis</i> Smith | ---; ---; 77 | Tokunaga | 1940 |
| | ---; ---; 143° | Smith | 1929 |
| | ---; ---; 190, 277 | Vargas | 1949 |

TABLE 1 - MIDGES (continued).

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|-----------------------|------|
| <i>CULICOIDES</i> <i>recurvus</i> Delfinado | ---; carabao-baited trap, May, light trap, Sept.; 242 | Delfinado | 1961 |
| <i>riethi</i> Kieffer | ---; ---; 2, 162, 321 | Gutzevich | 1960 |
| <i>saevus</i> Kieffer | ---; steppe and desert like landscape; 35, 256, 326, 345 | Gutzevich | 1960 |
| <i>salinarius</i> Kieffer | ---; alkaline reservoirs; 101, 162, 256 | Gutzevich | 1960 |
| <i>sarawakensis</i> Wirth & Hubert | ---; Dec.; 242 | Delfinado | 1961 |
| <i>schultzei</i> Enderlein | ---; ---; 76, 143, 158, 326 (Attacks man) | Gutzevich | 1960 |
| <i>sawamotoi</i> Kono & Takahasi | ---; ---; 256° | Kono & Takahasi | 1940 |
| <i>soapularis</i> Kieffer | ---; ---; 337 | Vargas | 1949 |
| <i>schultzei</i> (Enderlein) | ---; ---; 76, 77, 158, 168, 194 | Barnett & Toshioka | 1951 |
| | ---; ---; 190 | Vargas | 1949 |
| | ---; from light traps, Jan., March, May, June, Aug., Sept., from carabao-baited trap, May, Aug. and Dec.; 242 | Delfinado | 1961 |
| <i>schultzei</i> <i>kiefferi</i> Patton | ---; ---; 143 | Vargas | 1949 |
| <i>schultzei</i> <i>oxystoma</i> Kieffer | ---; ---; 143 | Vargas | 1949 |
| <i>schultzei</i> <i>pattoni</i> Kieffer | ---; ---; 143 | Vargas | 1949 |
| <i>sootiana</i> Downes & Kettle | ---; ---; 256, 318 | Gutzevich | 1960 |

TABLE 1 - MIDGES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|---|-----------------------|------|
| <i>CULICOIDES</i> | | | |
| <i>sejfadinei</i> Dzhafarov | ---; ---; 35, 256 | Gutzevich | 1960 |
| <i>setiger</i> Kieffer | ---; ---; 337 | Vargas | 1949 |
| <i>setosus</i> Gutzevich | ---; ---; 256, 321 (Attacks man at sundown) | Gutzevich | 1960 |
| <i>shermani</i> Causey | Tree holes; ---; 277 | Causey | 1938 |
| <i>shortti</i> Smith & Swaminath | ---; ---; 143° | Smith & Swaminath | 1932 |
| | ---; ---; 190, 277 | Vargas | 1949 |
| <i>sigaensis</i> Tokunaga | ---; mountainous region, occasionally bites man in the evening; 158° | Tokunaga | 1937 |
| | ---; ---; 158 | Vargas | 1949 |
| <i>similis</i> Carter, Ingram & Macfie | ---; ---; 31, 277 | Causey | 1938 |
| | ---; ---; 35, 118, 150, 256 | Gutzevich | 1960 |
| | ---; ---; 76, 210 | Barnett & Toshioka | 1951 |
| | ---; in laboratory window panes, on cattle sheds; 143 | Smith & Swaminath | 1932 |
| | ---; ---; 190 | Macfie | 1937 |
| <i>simulans</i> Vimmer | ---; ---; 342 | Vargas | 1949 |
| <i>simulator</i> Edwards | ---; ---; 101, 256 | Gutzevich | 1960 |
| <i>sinanoensis</i> Tokunaga | Forest bedding; ---; 76°, 256° | Gutzevich | 1960 |
| | ---; enters houses, in mountains; 158 | Tokunaga | 1937 |
| | ---; ---; 194 | Vargas | 1949 |
| <i>stigma</i> (Meigen) | Ruts on the roads; forest zone; 256 | Gutzevich | 1960 |
| <i>stigmaticus</i> Kieffer | ---; June-July; 256° | Olenov | 1945 |
| <i>subfascipennis</i> Kieffer | ---; ---; 101, 256 (Bites man) | Gutzevich | 1960 |

TABLE 1 - MIDGES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|---|-----------|------|
| <i>CULICOIDES</i> | | | |
| <i>subneglectus</i> Vimmer | ---; ---; 342 | Vargas | 1949 |
| <i>sugimotoi</i> Shiraki | ---; enters houses in evening, bloodsucker; 77°, 158° | Tokunaga | 1937 |
| | ---; ---; 77 | Vargas | 1949 |
| | ---; common; 158 | Tokunaga | 1940 |
| | ---; ---; 194 | Tokunaga | 1941 |
| | ---; attracted by light into houses; 168° | Hsiao | 1948 |
| <i>sugimotoi</i> <i>alboguttatus</i> Kieffer | ---; ---; 158 | Vargas | 1949 |
| <i>sugimotoi</i> <i>urakawae</i> (Matsumura) | ---; ---; 158 | Vargas | 1949 |
| <i>sugimotoi</i> <i>shimai</i> (Sasaki) | ---; ---; 158 | Vargas | 1949 |
| <i>sumatrae</i> Macfie | ---; ---; 149 | Macfie | 1934 |
| | ---; ---; 190 | Macfie | 1937 |
| | ---; carabao-baited trap, June, Aug., light trap, Sept.; 242 | Delfinado | 1961 |
| | ---; ---; 277 | Causey | 1938 |
| <i>tauricus</i> Gutzevich | ---; ---; 256, 321 | Gutzevich | 1960 |
| <i>taiwanus</i> (Shiraki) | ---; ---; 77 | Vargas | 1949 |
| <i>tentorius</i> Austin | ---; in lighted tent at night; 154, 342 | Austen | 1921 |
| | ---; ---; 256 | Gutzevich | 1960 |
| <i>tobaensis</i> Tokunaga | ---; ---; 158 | Tokunaga | 1937 |
| <i>tripunctatus</i> Vimmer | ---; ---; 342 | Vargas | 1949 |

TABLE 1 - MIDGES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---------------------------------|---|-----------|------|
| <i>CULICOIDES</i> | | | |
| <i>trivittatus</i> Vimmer | ---; ---; 342 | Vargas | 1949 |
| <i>truncorum</i> Edwards | ---; ---; 101, 118. Wet soil, sphagnum; ---; 256 | Gutzevich | 1960 |
| <i>turkmenicus</i> Gutzevich | ---; ---; 318 (Feeds on man) | Gutzevich | 1960 |
| <i>unguis</i> Tokunaga | ---; ---; 158 | Vargas | 1949 |
| <i>unicus</i> Delfinado | ---; at 3300 feet elevation, at light, Sept.; 242 | Delfinado | 1961 |
| <i>univittatus</i> Vimmer | ---; ---; 342 | Vargas | 1949 |
| <i>verbosus</i> Tokunaga | ---; at light, in house; 77 | Tokunaga | 1937 |
| | ---; ---; 158 | Tokunaga | 1940 |
| <i>versans</i> Staeger | Wet soil, between bushes and under trees; 256°, 321, 345 | Gutzevich | 1960 |
| <i>vitreipennis</i> Austen | ---; in lighted tent at night; 154, 342 | Austen | 1921 |
| <i>wenegi</i> Vimmer | ---; ---; 342 | Vargas | 1949 |
| <i>wenzeli</i> Delfinado | ---; from light traps, May; 242 | Delfinado | 1961 |
| <i>xanthocoma</i> Kieffer | ---; ---; 143 | Vargas | 1949 |
| <i>LASIOHELEA</i> | | | |
| <i>stimulans</i> de Meijere | ---; ---; 70°, 149° | Tokunaga | 1937 |
| <i>taiwana</i> Shiraki | ---; ---; sucks blood from man; 158° | Tokunaga | 1940 |
| | ---; ---; 158* | Tokunaga | 1937 |
| <i>LEPTOCONOPS</i> | | | |
| <i>bessii</i> Noé | ---; ---; 35, 256 (Bites man) | Gutzevich | 1960 |
| | ---; irritating on face, eyes, ears; 154, 159 | Buxton | 1924 |
| <i>bidentatus</i> Gutzevich | ---; ---; 256° | Gutzevich | 1960 |

TABLE 1 - MIDGES (concluded)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|------------------------------------|---|------------------------|-------|
| <i>LEPTOCONOPS</i> | | | |
| <i>borealis</i> Gutzevich | ---; Aug.; 162, 256, 318, 321 | Gutzevich | 1960 |
| <i>camelorum</i> Kieffer | ---; ---; 256 (Bites man) | Gutzevich | 1960 |
| <i>caucasicus</i> Gutzevich | ---; ---; 35 (Attacks man) | Gutzevich | 1960 |
| <i>flaviventris</i> Kieffer | ---; ---; 350 | Carter | 1921 |
| <i>indicus</i> Kieffer | ---; ---; 143 | Carter | 1921 |
| <i>kerteszi</i> Kieffer | Salt marshes; ---; 210° | Barnett & Toshioka | 1951 |
| <i>nipponensis</i> Tokunaga | ---; ---; 158 | Tokunaga | 1937 |
| <i>siamensis</i> Carter | ---; ---; 277 | Carter | 1921 |
| <i>STYLOCONOPS</i> | | | |
| <i>spinosifrons</i> (Carter) | ---; ---; 190 | Macfie | 1934a |
| <i>TERSESTHES</i> | | | |
| <i>luteigaster</i> Senior-White | ---; on seashore; 122° | Senior- White | 1929 |
| <i>mesopatamiensis</i> Theobald | ---; tents during the heat of day; 151° | Patton | 1920 |
| <i>TRICHOTANYPUS</i> | | | |
| <i>tiberiae</i> | ---; ---; 342° | Anonymous | 1944 |
| ADDENDA | | | |
| <i>CULICOIDES</i> | | | |
| <i>fascipennis</i> (Staeger) | ---; ---; 256 | Blagovesh- chenskii | 1930 |
| <i>nubeculosus</i> (Meigen) | ---; ---; 256° | Blagovesh- chenskii | 1930 |
| <i>sugimotoi</i> Shiraki | Puddles; ---; 256 | Gutzevich | 1947 |

TABLE 2 - SUMMARY OF DISEASES OR DISEASE ORGANISMS TRANSMITTED BY MIDGES

| SPECIES | DISEASE OR DISEASE ORGANISMS | | | | | COUNTRY |
|--|------------------------------|----------|---------------------------|--------------------|-----|---------|
| | VIRUS & | PROTOZOA | HELMINTHS | OTHER | | |
| | RICKETTSIA | | | | | |
| <i>CERATOPOGON</i> <i>taiwanus</i> (Shiraki) | | | | Edematose swelling | 77 | |
| <i>CULICOIDES</i> <i>anamiensis</i> Tokunaga | | | | Edematose swelling | 158 | |
| <i>maculatus</i> (Shiraki) | | | | Edematose swelling | 158 | |
| <i>nubeculosus</i> Meigen | | | | Edematose swelling | 158 | |
| <i>obsoletus</i> Meigen | | | | Edematose swelling | 158 | |
| <i>pungens</i> de Meijere | | | <i>Onchocerca gibsoni</i> | | 190 | |
| <i>LASIOHELEA</i> <i>taiwana</i> Shiraki | | | | Edematose swelling | 158 | |

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E. HORSE FLIES

The entries for horse flies (Tabanidae) include very little biology. Most of the literature on this large and important group is concerned with taxonomy, a lesser amount on distribution and no disease transmission was recorded.

The synonymy, both at the genus and the species level, is very complex. Several specialists are currently striving to straighten out some of these problems.

In the table are listed 1132 species or subspecies, but it is certain that many of these are not valid names.

TABLE 1 - HORSE FLIES

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|---|------------------|---------------|
| <i>APLOCOCERA</i> | | | |
| <i>caucasica</i> (Enderlein) | ---; ---; 345 | Enderlein | 1934 |
| <i>decora</i> (Loew) | ---; ---; 302 | Enderlein | 1934 |
| <i>himalayana</i> (Enderlein) | ---; ---; 31 | Enderlein | 1934 |
| <i>panirensis</i> (Enderlein) | ---; ---; 162 | Enderlein | 1934 |
| <i>ATYLOTUS</i> | | | |
| <i>abaxus</i> Bigot | ---; ---; 150, 345 ---; ---; 162 | Kröber Kröber | 1924a 1928 |
| <i>alazinus</i> Bigot | ---; ---; 345 | Kröber | 1923 |
| <i>alexandrinus</i> Wiedemann | ---; ---; 174, 302, 342 | Kröber | 1924a |
| <i>argenteo- maculatus</i> Kröber | ---; ---; 326 | Kröber | 1928 |
| <i>armeniensis</i> Kröber | ---; ---; 28 | Kröber | 1928 |
| <i>ater</i> Rossi | ---; ---; 317 ---; ---; 350 | Kröber Kröber | 1928 1924a |
| <i>bifarius</i> Loew | ---; ---; 256, 317, 321, 350, 354 | Kröber | 1924a |
| <i>bivittatus</i> Matsumura | ---; ricefields; 77. ---; May-Aug.; 150 | Shiraki | 1918 |
| <i>carabaghensis</i> Portnchinsky | ---; ---; 31, 150, 162, 345 | Kröber | 1924a |
| <i>crassinervis</i> Villeneuve | ---; ---; 256, 318, 354 | Kröber | 1924a |
| <i>erberi</i> Brauer | ---; ---; 256, 354 | Kröber | 1924a |

TABLE 1 - HORSE FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|---------|-------|
| <i>ATYLOTUS</i> <i>fulvus</i> Meigen | ---; ---; 76. ---; June-Sept.; 158 | Shiraki | 1918 |
| <i>gigas</i> Herbat | ---; ---; 256, 302, 317, 342, 350, 354 | Kröber | 1924a |
| <i>insecutor</i> Austen | ---; ---; 154, 302, 342 | Kröber | 1924a |
| <i>labanmeanus</i> Enderlein | ---; ---; 350 | Kröber | 1939 |
| <i>lunatus</i> Fabricius | ---; ---; 150, 154, 302, 342, 345, 350 | Kröber | 1924a |
| <i>negativus</i> Ricardo | ---; ---; 77, 139 | Shiraki | 1918 |
| <i>nemoralis</i> Meigen | ---; ---; 302, 342 | Kröber | 1924a |
| <i>peculiaris</i> Szilády | ---; ---; 162 | Kröber | 1924a |
| <i>pusillus</i> Egger | ---; ---; 317, 350 | Kröber | 1924a |
| <i>quatuornotatus</i> Meigen | ---; ---; 256, 354 | Kröber | 1924a |
| <i>rusticus</i> Enderlein | ---; ---; 158 | Shiraki | 1918 |
| <i>rusticus</i> <i>niger</i> Enderlein | ---; ---; 256 | Goffe | 1931 |
| <i>rusticus</i> <i>parallelifrons</i> Szilády | ---; ---; 256 | Goffe | 1931 |
| <i>sabulorum</i> Loew | ---; ---; 31, 150, 162, 256, 345, 354 | Kröber | 1924a |
| <i>tauricus</i> Enderlein | ---; ---; 350 | Kröber | 1939 |
| <i>tricolor</i> Zeller | ---; ---; 150, 162, 256, 317, 345, 354 | Kröber | 1924a |
| <i>umbrinus</i> Meigen | ---; ---; 317, 350 | Kröber | 1924a |

TABLE 1 - HORSE FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|--|--|------------------------------|
| <i>BAIKALIA</i> <i>vaillanti</i> Surcouf | ---; ---; 256 | Kröber | 1924a |
| <i>BUPLEX</i> <i>basini</i> Surcouf | ---; ---; 76 ---; ---; 144 | Seguy Surcouf | 1934 1923 |
| <i>CHASMIELLA</i> <i>polysoma</i> Szilády | ---; ---; 143 | Szilády | 1926 |
| <i>CHRYSOPS</i> <i>albicincta</i> van der Wulp | ---; ---; 147 | Schuermans Stekhoven | 1926 |
| <i>alter</i> Rondani | ---; ---; 145 | Schuermans Stekhoven | 1926 |
| <i>amurensis</i> Pleske | ---; ---; 256 | Kröber | 1920 |
| <i>angaricus</i> Olsuf'ev | ---; ---; 256, 353 | Kröber | 1939 |
| <i>anthrax</i> Olsuf'ev | ---; ---; 256 | Olsuf'ev | 1937 |
| <i>atrilineata</i> Schuurmans Stekhoven | ---; ---; 145 | Schuermans Stekhoven | 1926 |
| <i>atrivittata</i> Schuurmans Stekhoven | ---; marsh; 147 | Schuermans Stekhoven | 1926 |
| <i>basalis</i> Shiraki | ---; ---; 76 ---; Aug., in shrubs near mountain-stream; 158 | Hwang Shiraki | 1936 1918 |
| <i>beckeri</i> Kröber | ---; ---; 162, 256 | Kröber | 1920 |
| <i>binoculatus</i> Szilády | ---; ---; 256 | Kröber | 1925 |
| <i>buxtoni</i> Austen | ---; ---; 151 ---; ---; 154. ---; May, June; 159 ---; ---; 342 | Kröber Buxton Bodenheimer | 1925 1924 1937 |
| <i>caucasiensis</i> Linnaeus | ---; ---; 28 Forest, edge of lake; rarely bite on first alighting, June and Aug.; 256* ---; May-June; 256. ---; ---; 345 ---; ---; 302 | Kröber Fraser Olsuf'ev Kröber | 1939 1920 1937 1920 |

TABLE 1 - HORSE FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|--|-------------------------|-------|
| <i>CHRYSOPS</i> | | | |
| <i>cascutiens</i> var. <i>ludens</i> Loew | ---; ---; 350 | Kröber | 1939 |
| <i>cincta</i> Bigot | ---; ---; 190 | Schuermans Stekhoven | 1926 |
| | ---; ---; 242 | Schuermans Stekhoven | 1924 |
| <i>clavicornis</i> Thompson | ---; ---; 190 | Schuermans Stekhoven | 1924 |
| <i>compactus</i> Austen | ---; ---; 151 | Kröber | 1925 |
| | ---; ---; 154, 159 | Austen | 1924 |
| | ---; ---; 342 | Bodenheimer | 1937 |
| <i>concausus</i> Loew | ---; ---; 256* | Skufin | 1949 |
| | ---; ---; 256 | Kröber | 1920 |
| <i>designata</i> Ricardo' | ---; ---; 76, 143, 218 | Wu | 1940 |
| <i>dispar</i> (Fabricius) | ---; ---; 59, 70, 76, 133, 143, 144, 146, 149, 199, 350. ---; active in evening, occasionally bites man, 5-6 p.m.; 77° | Shiraki | 1918 |
| | ---; ---; 59, 133, 139, 218, 280. ---; common; 70, 76, 77, 143, 144, 146, 149, 158, 190, 277, 366 (All year) | Schuermans Stekhoven | 1926 |
| | ---; ---; 122 | Senior-White | 1927 |
| | ---; ---; 139, 185 | Hwang | 1936 |
| | ---; ---; 145, 242 | Wu | 1940 |
| | Fish ponds, open and forest pools and streams; ---; 146, 149 | Nieschulz | 1926 |
| | ---; ---; 235 | Schuermans Stekhoven | 1931 |
| | ---; ---; 256 | Kröber | 1920 |
| <i>dissectus</i> Loew | ---; ---; 166, 168, 194, 256, 353 | Kono & Takahasi | 1939a |
| <i>dissectus</i> var. <i>amurensis</i> Fleissner | ---; ---; 256 | Kröber | 1939 |
| <i>dissectus</i> <i>mongolicus</i> Szilády | ---; ---; 353 | Kröber | 1925 |

TABLE 1 - HORSE FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|--|-------------------------|------|
| <i>CHRYSOPS</i> | ---; ---; 256° | Skufin | 1949 |
| <i>divaricatus</i> Loew | ---; ---; 256 | Kröber | 1920 |
| <i>fasciata</i> Wiedemann | ---; ---; 11, 59, 143, 145, 146, 149, 190 | Schuermans Stekhoven | 1926 |
| <i>fasciatus</i> Wiedemann | ---; ---; 70, 145, 146, 149, 190, 277 | Nieschulz | 1935 |
| | ---; ---; 147 | Senior-White | 1927 |
| <i>fixissimus</i> Walker | ---; ---; 70, 145, 146, 149, 190, 280 (Nov.-Apr.) | Schuermans Stekhoven | 1926 |
| | ---; ---; 242 | Kröber | 1924 |
| <i>flaviceps</i> Meigen | ---; ---; 235 | Senior-White | 1927 |
| <i>flavipes</i> Meigen | ---; ---; 143, 366 | Schuermans Stekhoven | 1926 |
| | ---; ---; 150, 302 | Kröber | 1920 |
| | ---; ---; 162, 166, 256, 354 | Olsuf'ev | 1937 |
| | ---; ---; 256° | Skufin | 1949 |
| | ---; ---; 317 | Austen | 1925 |
| | ---; ---; 350 | Kröber | 1925 |
| <i>flavipes</i> <i>askahabadensis</i> Szilády | ---; ---; 318 | Kröber | 1925 |
| <i>flavipes</i> var. <i>beckeri</i> Kröber | ---; ---; 162 | Kröber | 1939 |
| <i>flavipes</i> <i>punotifer</i> Loew | ---; ---; 150, 302, 342, 345, 350 | Kröber | 1939 |
| | ---; ---; 318, 326 | Olsuf'ev | 1937 |
| <i>flaviventris</i> Macquart | ---; ---; 70, 143, 146, 149 | Schuermans Stekhoven | 1926 |
| <i>flavocinctus</i> (Ricardo) | ---; ---; 59 | Senior-White | 1922 |
| | ---; ---; 70, 145. ---; common, Nov.; 143 | Schuermans Stekhoven | 1926 |
| | ---; ---; 144 | Schuermans Stekhoven | 1928 |
| | ---; ---; 190 | Senior-White | 1927 |
| | ---; mountain region, enter houses, bite causes swelling and itching; 277° | Austen | 1922 |

TABLE 1 - HORSE FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|-------------------------|------|
| <i>CHRYSOPS</i> | --- | Kröber | 1920 |
| <i>hamatus</i> Loew | --- | Kröber | 1925 |
| <i>hermanni</i> Kröber | --- | Kröber | 1920 |
| <i>horvathi</i> Szilady | --- | Kröber | 1939 |
| <i>hyalipennis</i> Stackelberg | --- | Stackelberg | 1926 |
| | --- | Olsuf'ev | 1937 |
| <i>indianus</i> Ricardo | --- | Schuermans Stekhoven | 1926 |
| <i>interruptus</i> Kröber | --- | Kröber | 1920 |
| <i>italicus</i> Meigen | --- | Kröber | 1920 |
| | --- | Olsuf'ev | 1937 |
| | --- | Kröber | 1925 |
| <i>italicus</i> var. <i>nigriventris</i> Loew | --- | Kröber | 1920 |
| | --- | Kröber | 1939 |
| <i>japonicus</i> Wiedemann | --- | Hwang | 1936 |
| | --- | Kröber | 1920 |
| | --- | Shiraki | 1918 |
| | --- | Schuermans Stekhoven | 1931 |
| <i>lapponicus</i> Loew | --- | Kröber | 1925 |
| | --- | Kröber | 1920 |
| <i>loewi</i> Kröber | --- | Kröber | 1920 |
| <i>ludens</i> Loew | --- | Kröber | 1920 |
| | --- | Kröber | 1925 |
| <i>maculiventris</i> Becker | --- | Kröber | 1920 |

TABLE 1 - HORSE FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|--------------------|-------|
| <i>CHRYSOPS</i> | | | |
| <i>makerovi</i> Pleske | ---; ---; 256 | Kono & Takahasi | 1939 |
| <i>manilensis</i> Schiner | ---; ---; 242 | Bezzi | 1913 |
| <i>marus</i> Siebke | ---; ---; 76, 256 | Kröber | 1920 |
| <i>mlokosiewiczi</i> Bigot | ---, ---, 28, 194 | Kröber | 1920 |
| | ---; ---; 31, 76, 139, 150, 158, 256, 345 | Wu | 1940 |
| | ---; April-August; 77 | Shiraki | 1918 |
| <i>mlokosiewiczi</i> var. <i>obscurus</i> Kröber | --; ---; 76 | Kröber | 1939 |
| | ---; ---; 345 | Kröber | 1923 |
| <i>mlokosiewiczi</i> var. <i>oxienus</i> Pleske | ---; ---; 76 | Kröber | 1939 |
| <i>mlokosiewiczi</i> var. <i>van-der-wulpi</i> Kröber | ---; ---; 76, 77, 158, 168, 194 | Kono & Takahasi | 1939b |
| <i>mongolicus</i> Szilády | ---; ---; 353 | Wu | 1940 |
| <i>nona</i> (Olsuf'ev) | ---; ---; 256 | Anonymous | 1944a |
| <i>nigricornis</i> Matsumura | ---; ---; 158 | Kröber | 1925 |
| | ---; ---; 256 | Shiraki | 1918 |
| <i>nigripes</i> Zetterstedt | ---; ---; 194, 256 | Kono & Takahasi | 1939 |
| | ---; ---; 256* | Gutzevich | 1947 |
| <i>nigripes</i> var. <i>lapponicus</i> Loew | ---; ---; 256 | Kröber | 1939 |
| <i>nigripes</i> var. <i>nigricornis</i> Matsumura | ---; ---; 158 | Kröber | 1939 |

TABLE 1 - HORSE FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|------------------------|---|-------------------------|-------|
| <i>CHRYSOPS</i> | ---; ---; 31, 76 | Hsiao | 1945 |
| <i>oxianus</i> | | | |
| Pleske | ---; ---; 162 | Stackelberg | 1926 |
| | ---; ---; 256, 326 | Kröber | 1920 |
| <i>parallogrammus</i> | ---; ---; 256 | Sassuchin et al. | 1930 |
| Zeller | | | |
| <i>pellucidus</i> | ---; ---; 143, 366 | Schuermans Stekhoven | 1926 |
| Fabricius | | | |
| <i>pettigrewi</i> | ---; ---; 143 | Senior-White | 1927 |
| Ricardo | | | |
| <i>pictus</i> | ---; ---; 256° | Skufin | 1949 |
| Meigen | ---; ---; 256 | Olsuf'ev | 1937 |
| | ---; ---; 345 | Olsuf'ev | 1937 |
| <i>pluvialis</i> | | | |
| Linnaeus | | | |
| <i>potanini</i> | ---; ---; 76, 158 | Hsiao | 1945 |
| Pleske | | | |
| <i>przewalskii</i> | ---; ---; 76 | Kröber | 1920 |
| Pleske | ---; ---; 210, 353 | Wu | 1940 |
| <i>pseudoricardoae</i> | ---; ---; 162, 256 | Kröber | 1920 |
| Kröber | | | |
| <i>punctifer</i> | ---; ---; 154 | Austen | 1922b |
| Loew | ---; ---; 174, 302 | Kröber | 1920 |
| | ---; ---; 317* | Anonymous | 1944 |
| | ---; ---; 342, 350 | Kröber | 1925 |
| <i>punctifer</i> | | | |
| <i>abdominalis</i> | ---; ---; 302 | Kröber | 1920 |
| Kröber | | | |
| <i>punctifera</i> | Along creeks and watercourses; Apr.-May; 151 | Patton | 1920 |
| Loew | ---; ---; 154°, 159°, 302, 342°. ---; marshes; 174 | Austen | 1920 |
| | ---; October; 154. ---; April-September; 159, 174 | Buxton | 1924 |
| | ---; ---; 342 | Bodenheimer | 1937 |
| <i>quadratus</i> | ---; ---; 256 | Kröber | 1920 |
| Meigen | ---; ---; 345 | Olsuf'ev | 1937 |

TABLE 1 - HORSE FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|-----------------------------|---|----------------|------|
| <i>CHRYSOPS</i> | ---; ---; 162 | Olsuf'ev | 1937 |
| <i>relictus</i> | --- | | |
| Meigen | ---; ---; 256° | Skufin | 1949 |
| | ---; ---; 256 | Kröber | 1920 |
| <i>ricardoae</i> | ---; ---; 162, 353 | Olsuf'ev | 1937 |
| Pleske | ---; ---; 210 | Hsiao | 1945 |
| | ---; ---; 256 | Kröber | 1920 |
| <i>ricardoae</i> | | | |
| var. <i>przewalskii</i> | ---; ---; 76 | Kröber | 1939 |
| Pleske | | | |
| <i>ricardoae</i> | ---; ---; 162 | Kröber | 1939 |
| var. <i>pseudoricardoae</i> | | | |
| Kröber | | | |
| <i>ricardoae</i> | | | |
| var. <i>wagneri</i> | ---; ---; 256 | Kröber | 1939 |
| Pleske | | | |
| <i>rufipes</i> | ---; ---; 256 (May bite man) | Olsuf'ev | 1937 |
| Meigen | | | |
| <i>sakhalinensis</i> | ---; ---; 77, 158, 256 | Kröber | 1920 |
| Pleske | | | |
| <i>sejunctus</i> | ---; ---; 28, 321 | Kröber | 1939 |
| Szilády | ---; ---; 256 | Kröber | 1925 |
| | ---; ---; 345 | Olsuf'ev | 1937 |
| <i>semiignitus</i> | ---; ---; 76 | Kröber | 1939 |
| Kröber | | | |
| <i>sepulralis</i> | ---; ---; 256 | Edwards et al. | 1939 |
| Fabricius | | | |
| <i>sepulralis</i> | | | |
| var. <i>maurus</i> | ---; ---; 256 | Kröber | 1939 |
| Siebke | | | |
| <i>signifer</i> | ---; ---; 145, 242 | Schuurmans | 1928 |
| Walker | | Stekhoven | |
| | ---; Aug.; 147 | Schuurmans | 1926 |
| | | Stekhoven | |
| <i>simillimus</i> | ---; ---; 150, 151 | Austen | 1923 |
| Austen | | | |

TABLE 1 - HORSE FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|-----------------------|---|-------------------------|-------|
| <i>CHRYSOPE</i> | ---; ---; 76, 138. ---; May-Nov.; 77° | Shiraki | 1918 |
| <i>sinensis</i> | | | |
| Walker | ---; ---; 77 | Hsiao | 1945 |
| | ---; ---; 139 | Hwang | 1936 |
| | ---; ---; 256 | Kröber | 1920 |
| <i>sinensis</i> | | | |
| var. <i>balteatus</i> | ---; ---; 76 | Hwang | 1936 |
| Szilády | | | |
| <i>stackelbergi</i> | ---; ---; 162 | Olsuf'ev | 1937 |
| Olsuf'ev | | | |
| <i>stimulans</i> | Shallow water by a river bank; March-April; 143 | Fletcher | 1916 |
| Walker | ---; Nov.-Dec., Feb.; 143 | Fletcher | 1920 |
| | ---; ---; 366 | Schuermans Stekhoven | 1926 |
| <i>striata</i> | ---; ---; 139 | MacFarlane | 1915 |
| van der Wulp | | | |
| <i>suavis</i> | ---; ---; 76, 77 | Wu | 1940 |
| Loew | ---; July- 158. ---; ---; 256 | Shiraki | 1918 |
| | ---; ---; 168 | Hsiao | 1948 |
| <i>suavis</i> | | | |
| <i>sakhalinensis</i> | ---; ---; 158, 256 | Kono & Takahasi | 1939 |
| Pleske | | | |
| <i>suavis</i> | | | |
| <i>suavis</i> | ---; ---; 158, 168, 194, 256, 353 | Kono & Takahasi | 1939a |
| Loew | | | |
| <i>sinensis</i> | ---; ---; 77 | Schuermans Stekhoven | 1926 |
| Walker | | | |
| <i>stackelbergi</i> | ---; ---; 162 | Kröber | 1939 |
| Olsuf'ev | | | |
| <i>szechuanensis</i> | ---; ---; 76 | Kröber | 1934 |
| Kröber | | | |
| <i>translucens</i> | ---; ---; 145 | Schuermans Stekhoven | 1932 |
| Macquart | ---; ---; 190 | Schuermans Stekhoven | 1926 |
| <i>turanicus</i> | ---; ---; 318, 326 | Olsuf'ev | 1937 |
| Olsuf'ev | | | |

TABLE 1 - HORSE FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|---|--------------------|-------|
| <i>CHRYSOPS</i> | | | |
| <i>v-nigrum</i> de Meijere | ---; ---; 77 | Szilády | 1922 |
| <i>validus</i> Loew | ---; ---; 168, 194, 256 | Kono & Takahasi | 1939a |
| <i>vander-wulpi</i> Kröber | ---; ---; 256 | Olsuf'ev | 1937 |
| <i>vitripennis</i> Meigen | ---; ---; 28, 118, 345 | Kröber | 1920 |
| <i>wagneri</i> Pleske | ---; ---; 256 | Kröber | 1920 |
| <i>CHRYSOZONA</i> | | | |
| <i>antennata</i> Shiraki | ---; ---; 158, 168 | Kono & Takahasi | 1939a |
| <i>aquilina</i> Séguy | ---; ---; 76 | Séguy | 1934 |
| | ---; ---; 144 | Hwang | 1936 |
| <i>araxis</i> Szilády | ---; ---; 345 | Kröber | 1925 |
| <i>atrata</i> (Szilády) | ---; ---; 76 | Hsiao | 1945 |
| <i>caenofrons</i> Kröber | ---; ---; 345 | Kröber | 1925 |
| <i>caucasicola</i> Kröber | ---; ---; 345 | Kröber | 1925 |
| <i>crassicornis</i> Wahlberg | ---; May-June; 256. ---; ---; 345 | Olsuf'ev | 1937 |
| | ---; ---; 256° | Skufin | 1949 |
| <i>crassicornis</i> var. <i>flavopilosa</i> Kröber | ---; ---; 256 | Kröber | 1939 |
| <i>desertorum</i> Szilády | ---; ---; 256° | Gutzevich | 1947 |
| | ---; ---; 256 | Kröber | 1925 |
| <i>flavopilosa</i> Kröber | ---; ---; 256 | Kröber | 1925 |
| <i>formosana</i> Shiraki | ---; common; 77 | Shiraki | 1932 |
| <i>fusicornis</i> Becker | ---; ---; 256 | Kröber | 1939 |

TABLE 1 - HORSE FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|-----------------------|------|
| <i>CHRYSOZONA</i> | | | |
| <i>grandis</i> Macquart | ---; ---; 321 | Olsuf'ev | 1937 |
| <i>grandis</i> Szilády | ---; ---; 166 | Olsuf'ev | 1937 |
| <i>hedini</i> Kröber | ---; ---; 353 | Kröber | 1934 |
| <i>hispanica</i> Szilády | ---; ---; 256° | Skufin | 1949 |
| | ---; ---; 256 | Olsuf'ev | 1937 |
| <i>innominata</i> Austen | ---; ---; 342 | Kröber | 1925 |
| <i>italica</i> Meigen | ---; ---; 256 | Kröber | 1939 |
| <i>italica</i> var. <i>variegata</i> Fabricius | ---; ---; 317 | Kröber | 1939 |
| <i>kansuensis</i> Kröber | ---; ---; 76 | Kröber | 1934 |
| <i>kemali</i> Szilády | ---; ---; 350 | Kröber | 1925 |
| <i>koryoensis</i> Shiraki | ---; ---; 168 | Barnett & Toshioka | 1951 |
| <i>lata</i> (Ricardo) | ---; ---; 59, 76, 143, 149 | Hsiao | 1945 |
| <i>longiantennata</i> Olsuf'ev | ---; ---; 345 | Kröber | 1939 |
| <i>lunulata</i> Macquart | ---; ---; 76, 146 | Séguy | 1934 |
| | ---; ---; 242 | Bezzi | 1913 |
| <i>minuscule</i> Austen | ---; ---; 342 | Kröber | 1939 |
| <i>minuscularia</i> Austen | ---; ---; 342 | Kröber | 1925 |
| <i>minuscularia</i> <i>turkestanica</i> Szilády | ---; ---; 256 | Kröber | 1925 |
| <i>nana</i> Olsuf'ev | ---; ---; 168 | Barnett & Toshioka | 1951 |
| | ---; ---; 256 | Olsuf'ev | 1937 |

TABLE 1 - HORSE FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--------------------------------------|---|--------------------|-------|
| <i>CHRYSOZONA</i> | | | |
| <i>obscurata</i> Bigot | ---; ---; 150, 345 | Kröber | 1939 |
| <i>ornata</i> Kröber | ---; ---; 77 | Kröber | 1922 |
| <i>pallens</i> Loew | ---; ---; 162 | Kröber | 1928 |
| | ---; ---; 256, 321, 345. ---; common; 354 | Olsuf'ev | 1937 |
| <i>pallidula</i> Kröber | ---; ---; 256 | Kröber | 1925 |
| <i>peculiaris</i> Kono & Takahasi | ---; ---; 168 | Barnett & Toshioka | 1951 |
| <i>pluvialis</i> Linnaeus | ---; ---; 158 | Kröber | 1922 |
| | ---; ---; 256 | Olsuf'ev | 1937 |
| | ---; June-August; 256° | Skufin | 1949 |
| <i>pungens</i> Doleschall | ---; ---; 144 | Séguy | 1934 |
| <i>rufipennis</i> Bigot | ---; ---; 158 | Kröber | 1923 |
| <i>sakhalinensis</i> (Shiraki) | ---; ---; 256 | Kono & Takahasi | 1939 |
| <i>sewelli</i> Austen | ---; ---; 342 | Kröber | 1939 |
| <i>sinensis</i> Ricardo | ---; ---; 76 | Hwang | 1936 |
| <i>sobrina</i> Kröber | ---; ---; 350 | Kröber | 1925 |
| <i>eurooufi</i> Kröber | ---; ---; 76 | Hwang | 1936 |
| <i>tamerlani</i> Szilády | ---; ---; 168, 194, 256, 353 | Kono & Takahasi | 1939a |
| <i>tristis</i> (Bigot) | ---; ---; 158, 170, 256 | Kono & Takahasi | 1939 |
| | ---; ---; 168 | Barnett & Toshioka | 1951 |
| <i>turkestanica</i> Kröber | ---; ---; 162, 256 | Olsuf'ev | 1937 |

TABLE 1 - HORSE FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|-----------------------------------|--------------|
| <i>CHRYSOZONA</i> | | | |
| <i>ustulata</i> Kröber | ---; ---; 76 | Kröber | 1934 |
| <i>vaillanti</i> Surcouf | ---; ---; 256 | Kröber | 1925 |
| <i>yamadai</i> Shiraki | ---; ---; 194 | Hsiao | 1946 |
| <i>CORIZONEURA</i> | | | |
| <i>caucasica</i> Kröber | ---; ---; 345 | Kröber | 1925 |
| <i>longirostris</i> Hardwicke | ---; 5000 feet and 7500 feet elevation, July-Sept.; 143 | Fletcher & Sen | 1931 |
| <i>oritensis</i> Bigot | ---; ---; 345 | Kröber | 1923 |
| <i>taprobanes</i> Walker | ---; ---; 76 ---; ---; 143 | Senior-White Fletcher & Sen | 1927 1931 |
| | ---; ---; 349 | de Mello & Afonso | 1921 |
| <i>tigris</i> Bigot | ---; ---; 150, 345 | Kröber | 1925 |
| <i>varipes</i> (Ricardo) | ---; ---; 147 | Schuermans Stekhoven | 1932b |
| <i>yencensis</i> Shiraki | ---; ---; 158 | Shiraki | 1918 |
| <i>sonata</i> Walker | ---; ---; 25 | Kröber | 1925 |
| <i>CYDISTOMYIA</i> | | | |
| <i>aluensis</i> Oldroyd | ---; ---; 147 | Oldroyd | 1948 |
| <i>DASYRRHAMPHIS</i> | | | |
| <i>ater</i> Rossi | ---; ---; 350 | Kröber | 1939 |
| <i>DASYSTYPIA</i> | | | |
| <i>bivittata</i> (Matsumura) | ---; ---; 76 | Séguy | 1934 |
| <i>labameana</i> Enderlein | ---; ---; 350 | Kröber | 1923 |
| <i>rustica</i> <i>nigra</i> Enderlein | ---; ---; 256 | Frober | 1925 |

TABLE 1 - HORSE FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|-------------------------|--------------|
| <i>DIACHLORUS</i> <i>flavipennis</i> Macquart | ---; ---; 242 | Kröber | 1924 |
| <i>fulvescens</i> Brunetti | ---; ---; 143 | Senior-White | 1927 |
| <i>EUCOMPSA</i> <i>tecticallosa</i> Schuurmans Stekhoven | ---; ---; 145 | Schuurmans Stekhoven | 1932b |
| <i>GASTROIDES</i> <i>ater</i> Saunders | Muck in tree holes; June, July; 143 ---; Nov.-Jan.; 143 | Isaac Fletcher | 1925 1923 |
| <i>aterrimus</i> Schuurmans Stekhoven | ---; ---; 190 | Schuurmans Stekhoven | 1926 |
| <i>atricinctus</i> Schuurmans Stekhoven | ---; ---; 146 | Schuurmans Stekhoven | 1928 |
| <i>fuscus</i> Schuurmans Stekhoven | ---; ---; 190 | Schuurmans Stekhoven | 1926 |
| <i>ornatus</i> Bigot | ---; ---; 70 | Senior-White | 1927 |
| <i>HAEMATOBIA</i> <i>stimilans</i> Meigen | ---; ---; 294 | Breev | 1930 |
| <i>HAEMATOPOTA</i> <i>albofasciatipennis</i> Brunetti | ---; ---; 143 | Senior-White | 1927 |
| <i>angustisegmentata</i> Schuurmans Stekhoven | ---; ---; 145 | Schuurmans Stekhoven | 1932b |
| <i>annandalei</i> Ricardo | ---; ---; 143, 218, 366 | Schuurmans Stekhoven | 1926 |
| <i>annulipes</i> Schuurmans Stekhoven | ---; ---; 149 | Schuurmans Stekhoven | 1926 |
| <i>assamensis</i> Ricardo | ---; ---; 143, 218, 366 | Schuurmans Stekhoven | 1926 |
| <i>atomaria</i> Walker | ---; ---; 145 | Schuurmans Stekhoven | 1926 |

TABLE 1 - HORSE FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|---|-------------------------|-------|
| <i>HAEMATOPOTA</i> | | | |
| <i>atrata</i> Szilády | ---; ---; 76 | Wu | 1940 |
| <i>atriventer</i> Schuurmans Stekhoven | ---; ---; 149 | Schuurmans Stekhoven | 1926 |
| <i>beesoni</i> Senior-White | ---; ---; 59, 143 | Senior-White | 1922 |
| <i>belligera</i> Austen | ---; ---; 317 | Austen | 1925 |
| <i>bilineata</i> Ricardo | ---; ---; 143, 218, 366 | Schuurmans Stekhoven | 1926 |
| <i>birai</i> Szilády | ---; ---; 143 | Szilády | 1926 |
| <i>bisonata</i> Schuurmans Stekhoven | ---; ---; 145, 146 | Schuurmans Stekhoven | 1932b |
| <i>borneana</i> Rondani | ---; ---; 145 | Schuurmans Stekhoven | 1926 |
| <i>brevis</i> Ricardo | ---; ---; 70, 143, 218, 366 | Schuurmans Stekhoven | 1926 |
| <i>burmanioa</i> Senior-White | ---; ---; 59, 143 | Senior-White | 1922 |
| <i>cana</i> Walker | ---; ---; 143, 218, 366 | Schuurmans Stekhoven | 1926 |
| <i>cilipes</i> Bigot | ---; ---; 59, 144, 277 | Schuurmans Stekhoven | 1926 |
| <i>cingalensis</i> Ricardo | ---; ---; 70, 143, 218, 366 | Schuurmans Stekhoven | 1926 |
| <i>cingulata</i> Wiedemann | ---; in jungle; 146 | Schuurmans Stekhoven | 1928 |
| <i>confluens</i> Schuurmans Stekhoven | ---; ---; 149 | Schuurmans Stekhoven | 1926 |
| <i>coronata</i> Austen | ---; ---; 2, 332 | Oldroyd | 1952 |
| | ---; ---; 154 | Oldroyd | 1957 |
| <i>crassicornis</i> Wahlberg | ---; ---; 143 | Isaac | 1925a |
| | ---; ---; 256 | Blagovesh- chenskii | 1930 |

TABLE 1 - HORSE FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|---|--------------|
| <i>HAEMATOPOTA</i> | | | |
| <i>demellonis</i> Senior-White | ---; ---; 122, 143 | Senior-White | 1927 |
| <i>desertorum</i> Szilády | ---; ---; 256 | Szilády | 1923 |
| <i>dissimilis</i> Ricardo | ---; ---; 143, 218, 366 | Schuermans Stekhoven | 1926 |
| <i>elegans</i> Schuurmans Stekhoven | ---; ---; 146 | Schuermans Stekhoven | 1926 |
| <i>ensifer</i> Schuurmans Stekhoven | ---; ---; 146 | Schuermans Stekhoven | 1926 |
| <i>equitibiata</i> Schuurmans Stekhoven | ---; ---; 149 | Schuermans Stekhoven | 1926 |
| <i>fasciata</i> Ricardo | ---; ---; 59 ---; ---; 143, 218, 366 | Szilády Schuurmans Stekhoven | 1926 1926 |
| <i>flavicornis</i> Szilády | ---; ---; 143 | Szilády | 1926 |
| <i>formosana</i> Shiraki | ---; ---; 77°, 256 | Shiraki | 1918 |
| <i>fraseri</i> Austen | ---; ---; 317 ---; ---; 342 | Austen Bodenheimer | 1925 1937 |
| <i>fumigata</i> Schuurmans Stekhoven | ---; Nov.-Dec.; 146 | Schuermans Stekhoven | 1926 |
| <i>fuscifrons</i> (Austen) | ---; ---; 59 ---; ---; 143, 218, 366 | Senior-White Schuurmans Stekhoven | 1927 1926 |
| <i>hindostani</i> Ricardo | ---; ---; 143 | Senior-White | 1927 |
| <i>hispanioa</i> Szilády | ---; ---; 256 ---; ---; 345 | Leclercq Kalugin | 1961 1945 |
| <i>immaculata</i> Ricardo | ---; ---; 143, 218, 366 ---; ---; 146 | Schuermans Stekhoven Szilády | 1926 1926 |

TABLE 1 - HORSE FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|--|-------------------------|-------|
| <i>HAEMATOPOTA</i> | | | |
| <i>inconspicua</i> Ricardo | ---; ---; 143, 218, 366 | Schuurmans Stekhoven | 1926 |
| <i>indiana</i> Bigot | ---; ---; 143, 218, 366 | Schuurmans Stekhoven | 1926 |
| <i>indianus</i> Ricardo | ---; ---; 122 | Senior-White | 1927 |
| <i>innominata</i> Austen | ---; May, June; 154, 159 | Buxton | 1924 |
| | ---; ---; 342 | Austen | 1922b |
| <i>intermedia</i> Schuurmans Stekhoven | ---; ---; 149 | Schuurmans Stekhoven | 1926 |
| <i>irregularis</i> Schuurmans Stekhoven | ---; ---; 145 | Schuurmans Stekhoven | 1926 |
| <i>irrorata</i> Macquart | ---; ---; 145, 146, 149, 190 | Schuurmans Stekhoven | 1926 |
| <i>irrorata</i> <i>cristata</i> Schuurmans Stekhoven | ---; ---; 149 | Schuurmans Stekhoven | 1926 |
| <i>jacobsoni</i> Schuurmans Stekhoven | ---; ---; 146 | Schuurmans Stekhoven | 1926 |
| <i>javana</i> Wiedemann | ---; July-Aug.; 59. ---; ---; 143, 144, 146, 190, 218. ---; all year; 149 | Schuurmans Stekhoven | 1926 |
| | ---; ---; 145 | Senior-White | 1927 |
| | ---; ---; 277 | Schuurmans Stekhoven | 1928 |
| <i>kemali</i> Szilády | ---; ---; 350 | Szilády | 1923 |
| <i>lata</i> Ricardo | ---; ---; 59, 143, 144, 218, 366 | Schuurmans Stekhoven | 1926 |
| | ---; ---; 76, 149 | Wu | 1940 |
| <i>latebricola</i> Austen | ---; ---; 317 | Austen | 1925 |
| <i>lufasoi</i> Ricardo | ---; ---; 143, 218, 366 | Schuurmans Stekhoven | 1926 |

TABLE 1 - HORSE FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|-------------------------|-------|
| <i>HAEMATOPOTA</i> | | | |
| <i>limbata</i> Bigot | ---; ---; 143, 218, 366 | Schuermans Stekhoven | 1926 |
| <i>litoralis</i> Ricardo | ---; ---; 143 | Senior-White | 1927 |
| <i>lunulata</i> Macquart | ---; ---; 145 | Schuermans Stekhoven | 1932b |
| | ---; ---; 146, 149, 190 | Schuermans Stekhoven | 1926 |
| <i>macer</i> Bigot | ---; ---; 122 | Senior-White | 1927 |
| <i>maculata</i> de Meijere | ---; ---; 146 | Schuermans Stekhoven | 1926 |
| <i>malayensis</i> Ricardo | ---; ---; 190 | Schuermans Stekhoven | 1926 |
| <i>marginata</i> Ricardo | ---; ---; 70 | Schuermans Stekhoven | 1926 |
| | ---; ---; 143 | Senior-White | 1927 |
| <i>mediatrifrons</i> Schuurmans Stekhoven | ---; ---; 145 | Schuermans Stekhoven | 1928 |
| | ---; ---; 149, 190 | Schuermans Stekhoven | 1926 |
| <i>minuscule</i> Austen | ---; ---; 159 | Austen | 1920 |
| | ---; ---; 256 | Szilády | 1923 |
| | ---; ---; 342 | Bodenheimer | 1937 |
| <i>minuscule</i> var. <i>turkestanica</i> Szilády | ---; ---; 162 | Szilády | 1923 |
| <i>minuscularia</i> Austen | ---; ---; 159* | Austen | 1920 |
| | ---; ---; 342 | Bodenheimer | 1937 |
| <i>mirabilis</i> Schuurmans Stekhoven | ---; ---; 145 | Schuermans Stekhoven | 1932b |
| <i>montana</i> Ricardo | ---; ---; 143 | Patton | 1922 |
| <i>nigricans</i> Schuurmans Stekhoven | ---; ---; 149 | Schuermans Stekhoven | 1926 |

TABLE 1 - HORSE FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|-------------------------|-------|
| <i>HAEMATOPOTA</i> <i>nigrita</i> Schuurmans Stekhoven | ---; ---; 149 | Schuurmans Stekhoven | 1926 |
| <i>pachycera</i> Bigot | ---; ---; 59, 144, 190, 277 | Schuurmans Stekhoven | 1926 |
| <i>paucipunctata</i> Schuurmans Stekhoven | ---; ---; 146 | Schuurmans Stekhoven | 1926 |
| | ---; ---; 149 | Schuurmans Stekhoven | 1928 |
| <i>pluvialis</i> Linnaeus | ---; ---; 101 | Dampf | 1924 |
| | ---; ---; 143 | Isaac | 1925a |
| | ---; ---; 162, 256 | Sassuchin et al. | 1930 |
| | ---; June; 256° | Fraser | 1920 |
| | ---; ---; 345 | Kalugin | 1945 |
| <i>punctifera</i> Bigot | ---; ---; 146 | Schuurmans Stekhoven | 1926 |
| <i>pungens</i> Doleschall | ---; ---; 145, 146, 149 | Schuurmans Stekhoven | 1926 |
| <i>rhizophorae</i> Senior-White | ---; ---; 143 | Senior-White | 1927 |
| <i>ricardonis</i> Senior-White | ---; ---; 70 | Senior-White | 1925 |
| <i>rcralis</i> Fabricius | ---; ---; 70, 145, 146, 218, 366 | Schuurmans Stekhoven | 1926 |
| | ---; Aug.; 143 | Fletcher | 1930 |
| | ---; ---; 190 | Roy & Brown | 1954 |
| <i>rubida</i> Ricardo | ---; ---; 59, 144, 190, 277 | Schuurmans Stekhoven | 1926 |
| <i>rufipennis</i> Bigot | ---; ---; 158 | Shiraki | 1918 |
| <i>sakhalinensis</i> Shiraki | ---; ---; 256 | Shiraki | 1918 |
| <i>sewelli</i> Austen | ---; in marsh; 154°. ---; on river bank; 159° | Austen | 1920 |
| | ---; ---; 342 | Anonymous | 1944b |

TABLE 1 - HORSE FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|-------------------------|------|
| <i>HAEMATOPOTA</i> | | | |
| <i>sinensis</i> Ricardo | ---; ---; 76 | Schuurmans Stekhoven | 1931 |
| <i>singularis</i> Ricardo | ---; ---; 59, 144, 277 | Schuurmans Stekhoven | 1926 |
| <i>splendens</i> Schuurmans Stekhoven | ---; ---; 190 | Schuurmans Stekhoven | 1926 |
| <i>stantoni</i> Ricardo | ---; ---; 190 | Ricardo | 1916 |
| <i>striatipennis</i> (Brunetti) | ---; ---; 143 | Senior-White | 1922 |
| <i>tenasserimi</i> Szilády | ---; ---; 59 | Szilády | 1926 |
| <i>tenasserimi</i> var. <i>tonkinians</i> Szilády | ---; ---; 144 | Szilády | 1926 |
| <i>tessellata</i> Ricardo | ---; ---; 70 | Schuurmans Stekhoven | 1926 |
| <i>tristis</i> Bigot | ---; May-Sept.; 158° | Shiraki | 1918 |
| <i>truncata</i> Schuurmans Stekhoven | ---; ---; 149 | Schuurmans Stekhoven | 1926 |
| <i>tuberculata</i> de Meijere | ---; ---; 146 | Schuurmans Stekhoven | 1926 |
| <i>turkestanica</i> Krüber | ---; experimental transmission of tularemia; 162 | Olsuf'ev & Golov | 1936 |
| <i>unisonata</i> Ricardo | ---; ---; 70, 190 | Schuurmans Stekhoven | 1926 |
| | ---; ---; 143, 149 | Senior-White | 1927 |
| <i>unisonata</i> <i>matherani</i> Szilády | ---; ---; 143 | Szilády | 1926 |
| <i>variegata</i> var. <i>rotunda</i> Szilády | ---; ---; 31 | Szilády | 1923 |
| <i>yamadai</i> (Shiraki) | ---; ---; 194 | Wu | 1940 |

TABLE 1 - HORSE FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|-------------------------|--------------|
| <i>HEPTOTOMA pellucens</i> Fabricius | ---; ---; 256 (Blood sucker) | Olsuf'ev | 1937 |
| <i>HETEROCHRYSOPS mlokosiewiczi</i> Bigot | ---; ---; 76, 158 | Séguy | 1934 |
| <i>ISSHIKIA japonica</i> Bigot | ---; ---; 158 | Kröber | 1924a |
| <i>trifasciata</i> Szilády | ---; ---; 158 | Shiraki | 1932 |
| <i>LISSIMAS moestus</i> Szilády | ---; ---; 145 | Szilády | 1926 |
| <i>MELISSOMORPHA indiana</i> Ricardo | ---; ---; 143 | Senior-White | 1927 |
| <i>NANORRHYNCHUS crassinervis</i> Kröber | ---; ---; 318, 354 ---; ---; 326 | Kröber Olsuf'ev | 1939 1937 |
| <i>NEMORIUS vitripennis</i> Meigen | ---; ---; 345 | Kröber | 1925 |
| <i>NEOBOLBODIMYIA argentata</i> Szilády | ---; ---; 145 | Szilády | 1926 |
| <i>lacticornis</i> Schuurmans Stekhoven | ---; ---; 145 | Schuurmans Stekhoven | 1926 |
| <i>NEOCHRYSOPS grandis</i> Szilády | ---; ---; 77 | Szilády | 1922 |
| <i>NEOTABANUS ceylonicus</i> Ricardo | ---; ---; 70 | Senior-White | 1927 |
| <i>NUCERIA longirostris</i> Hardwicke | ---; ---; 143 | Schuurmans Stekhoven | 1932b |
| <i>taprobanae</i> (Ricardo) | ---; ---; 70 | Schuurmans Stekhoven | 1932b |
| <i>varipes</i> (Ricardo) | ---; ---; 31, 143 | Schuurmans Stekhoven | 1932b |
| <i>OCHROPS adjacens</i> Ricardo | ---; ---; 28, 150, 345 | Kröber | 1924 |

TABLE 1 - HORSE FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|---|---------|-------|
| <i>OCHROPS</i> | ---; ---; 25, 162 | Kröber | 1924a |
| <i>agrestis</i> Wiedemann | ---; ---; 256 | Kröber | 1925 |
| <i>agricola</i> Wiedemann | ---; ---; 25, 77, 139, 158, 342 | Kröber | 1924a |
| <i>albicans</i> Macquart | ---; ---; 25 | Kröber | 1924a |
| <i>albopruinosus</i> Szilády | ---; ---; 151 | Kröber | 1925 |
| <i>angusticornis</i> Loew | ---; ---; 77, 158 | Kröber | 1924a |
| <i>austeni</i> Szilády | ---; ---; 28, 150, 317, 345 | Kröber | 1924a |
| <i>austeni</i> var. <i>trifasciatus</i> Szilády | ---; ---; 28, 150, 317, 345 | Kröber | 1924a |
| <i>austeni</i> var. <i>unifasciatus</i> Szilády | ---; ---; 28, 150, 317, 345 | Kröber | 1924a |
| <i>bivittatus</i> Matsumura | ---; ---; 77, 158 | Kröber | 1924a |
| <i>ditaeniatus</i> Macquart | ---; ---; 25, 28, 31, 76, 77, 150, 158, 345 | Kröber | 1924a |
| <i>farinosus</i> Szilády | ---; ---; 25, 302, 342 | Kröber | 1924a |
| <i>flavoguttatus</i> Szilády | ---; ---; 28, 150, 345 | Kröber | 1924a |
| <i>flavoguttatus</i> var. <i>quadripunctatus</i> Szilády | ---; ---; 28, 150, 345 | Kröber | 1924a |
| <i>fulvus</i> Meigen | ---; ---; 76, 77, 158, 256, 350 | Kröber | 1924a |
| <i>fulvus</i> var. <i>loewianus</i> Villaeneuve | ---; ---; 256 | Kröber | 1924a |
| <i>griseocens</i> Szilády | ---; ---; 25 | Kröber | 1924a |
| <i>horvathi</i> Szilády | ---; ---; 158 | Shiraki | 1932 |

TABLE 1 - HORSE FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|-------------------------|-------|
| <i>OCHROPS</i> | | | |
| <i>karybei</i> thinus Szilády | ---; ---; 162, 318, 326, 353 | Kröber | 1924a |
| <i>kerdeszi</i> Szilády | ---; ---; 162, 256 | Kröber | 1924a |
| | ---; ---; 342 | Kröber | 1925 |
| <i>lacteipennis</i> Becker | ---; ---; 28, 150, 345 | Kröber | 1924a |
| <i>latestriatus</i> Brauer | ---; ---; 162, 256, 318, 353 | Kröber | 1924a |
| <i>miser</i> Szilády | ---; ---; 162, 194, 256, 318, 353 | Kröber | 1924a |
| <i>nigrifacies</i> Gobert | ---; ---; 256 | Kröber | 1924a |
| <i>niveipalpus</i> Bigot | ---; ---; 28, 150, 345 | Kröber | 1924a |
| <i>petiolatus</i> Szilády | ---; ---; 76 | Kröber | 1939 |
| <i>pulchellus</i> Loew | ---; ---; 25, 28, 150, 345, 350 | Kröber | 1924a |
| | ---; ---; 151, 354 | Kröber | 1925 |
| <i>quadrifarius</i> Loew | ---; ---; 151, 162, 256, 318, 353 | Kröber | 1924a |
| <i>rusticus</i> Linnaeus | ---; ---; 28, 77, 101, 150, 158, 256, 345 | Kröber | 1924a |
| | ---; ---; 180 | Bouvier | 1945 |
| <i>rusticus</i> <i>parallelifrons</i> Szilády | ---; ---; 256 | Kröber | 1925 |
| <i>PANGONIA</i> | | | |
| <i>amboinensis</i> Fabricius | ---; ---; 146, 147 | Schuermans Stekhoven | 1926 |
| <i>argentata</i> Szilády | ---; ---; 302, 317, 350 | Szilády | 1923 |
| <i>caffra</i> Macquart | ---; ---; 25 | Kröber | 1925 |
| <i>caucasiou</i> Kröber | ---; ---; 162 | Kröber | 1939 |
| | ---; ---; 256 | Szilády | 1923 |
| <i>flavocincta</i> Szilády | ---; ---; 317 | Szilády | 1923 |
| | ---; ---; 350 | Kröber | 1925 |

TABLE 1 - HORSE FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|--------------------|------|
| <i>PANGONIA</i> | ---; ---; 302, 350 | Szilády | 1923 |
| <i>fulvipes</i> Loew | ---; ---; 317 | Kröber | 1933 |
| <i>fulvipes</i> <i>palpalis</i> Kröber | ---; ---; 350 | Kröber | 1925 |
| <i>haustellata</i> Fabricius | ---; ---; 317, 350 | Kröber | 1939 |
| <i>lucida</i> Szilády | ---; ---; 317 | Szilády | 1923 |
| | ---; ---; 350 | Kröber | 1925 |
| <i>marginata</i> Fabricius | ---; ---; 317, 350 | Szilády | 1923 |
| <i>obscurata</i> Loew | ---; ---; 350 | Kröber | 1925 |
| <i>oritensis</i> Bigot | ---; ---; 345 | Kröber | 1939 |
| <i>pyritosa</i> Loew | ---; ---; 321, 345. ---; ---; 256 (May bite man) | Olsuf'ev | 1937 |
| | ---; ---; 350 | Kröber | 1925 |
| <i>pyritosa</i> <i>decepiens</i> Kröber | ---; ---; 350 | Kröber | 1925 |
| <i>rhynchocephala</i> Kröber | ---; ---; 317 | Szilády | 1923 |
| <i>sinensis</i> Enderlein | ---; ---; 76 | Kröber | 1939 |
| <i>subfasciata</i> Walker | ---; ---; 25 | Szilády | 1923 |
| <i>tigris</i> Bigot | ---; ---; 150, 345 | Kröber | 1925 |
| <i>variegata</i> Fabricius | ---; ---; 350 | Szilády | 1923 |
| <i>yessoensis</i> Shiraki | ---; ---; 158 | Kono & Takahasi | 1939 |
| <i>sonata</i> Walker | ---; ---; 25 | Szilády | 1923 |

TABLE 1 - HORSE FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|-------------------------|-------|
| <i>PANGONIUS</i> <i>haustellatus</i> Fabricius | ---; ---; 317 | Austen | 1925 |
| <i>pyritosus</i> Loew | ---; ---; 317 | Austen | 1925 |
| <i>sinensis</i> Enderlein | ---; ---; 76 | Hwang | 1936 |
| <i>tigris</i> Bigot | ---; ---; 151, 345 | Kröber | 1939 |
| <i>PARACANTHOCERA</i> <i>parallelus</i> Walker | ---; ---; 147 | Oldroyd | 1948 |
| <i>PHYRTA</i> <i>administrans</i> Schiner | ---; ---; 77, 158 | Kröber | 1939 |
| <i>amaena</i> Walker | ---; ---; 76, 77, 158, 353 | Kröber | 1939 |
| <i>amaena</i> var. <i>adumbrata</i> Szilády | ---; ---; 76 | Kröber | 1939 |
| <i>amaena</i> var. <i>lateralis</i> Shiraki | ---; ---; 77 | Kröber | 1939 |
| <i>grisea</i> Kröber | ---; ---; 256 | Kröber | 1939 |
| <i>grisea</i> var. <i>pallidiventris</i> Olsuf'ev | ---; ---; 76, 168 | Kröber | 1939 |
| <i>mandarina</i> Schiner | ---; ---; 76, 77, 158 | Kröber | 1939 |
| <i>takasagoensis</i> Shiraki | ---; ---; 76, 77, 158 | Kröber | 1939 |
| <i>PITYOCERA</i> <i>festae</i> Giglio-Tos | ---; ---; 194 | Wu | 1940 |
| <i>PSYLOCHRYSCOPS</i> <i>clavicus</i> Thomson | ---; ---; 190, 242 | Szilády | 1926 |
| <i>flaviventris</i> Macquart | ---; ---; 146 | Schuermans Stekhoven | 1932b |

TABLE 1 - HORSE FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY (GENERAL STATEMENTS) | DISTRIBUTION | AUTHOR | DATE |
|--|---|--------------|-------------------------|-------|
| <i>PSYLOCHRYSOPS</i> | | | | |
| <i>grandis</i> Szilády | ---; ---; 77 | | Shiraki | 1932 |
| <i>unizona</i> Szilády | ---; ---; 145 | | Szilády | 1926 |
| <i>SILVIOCHRYSOPS</i> | | | | |
| <i>fasciatipectus</i> Kröber | ---; c mon; 77 | | Shiraki | 1932 |
| <i>flavescens</i> Szilády | ---; ---; 77 | | Szilády | 1922 |
| <i>SILVIUS</i> | | | | |
| <i>caucasicus</i> Olsuf'ev | ---; ---; 345 | | Kröber | 1939 |
| <i>celebensis</i> Schuurmans Stekhoven | ---; in forest; 145 | | Schuurmans Stekhoven | 1932a |
| <i>ceylonicus</i> Szilády | ---; ---; 70 | | Szilády | 1926 |
| <i>coquilletti</i> Kröber | ---; ---; 158 | | Kröber | 1925 |
| <i>dimidiatus</i> van der Wulp | ---; ---; 147 | | Schuurmans Stekhoven | 1926 |
| <i>dorsalis</i> Coquillett | ---; ---; 158, 257 | | Shiraki | 1918 |
| <i>fasciatus</i> Kröber | ---; ---; 77 | | Kröber | 1922 |
| <i>fascipennis</i> Kröber | ---; ---; 77 | | Kröber | 1922 |
| <i>formosensis</i> Ricardo | ---; ---; 76 | | Shiraki | 1918 |
| | ---; ---; 77 | | Kröber | 1922 |
| <i>indianus</i> Ricardo | ---; ---; 143 | | Senior-White | 1927 |
| <i>inflaticornis</i> Austen | ---; ---; 317 | | Austen | 1925 |
| <i>irritans</i> Ricardo | ---; ---; 3, 150, 151 | | Austen | 1923 |
| <i>latifrons</i> Olsuf'ev | ---; ---; 345 | | Olsuf'ev | 1937 |

TABLE 1 - HORSE FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|---|-------------------------|-------|
| <i>SILVIUS</i> | | | |
| <i>matsumurai</i> Kono & Takahasi | ---; ---; 158 | Kono & Takahasi | 1939 |
| <i>nigripennis</i> Shiraki | ---; ---; 77 | Shiraki | 1932 |
| <i>ochraceus</i> Loew | ---; ---; 350 | Kröber | 1925 |
| <i>pictus</i> Szilády | ---; ---; 70 | Szilády | 1926 |
| <i>tecticallosa</i> Schuurmans Stekhoven | ---; ---; 145 | Schuermans Stekhoven | 1932b |
| <i>unicolor</i> Becker | ---; ---; 150 | Kröber | 1922 |
| <i>vitripennis</i> Meigen | ---; ---; 318, 326, 345 | Olsuf'ev | 1937 |
| <i>vituli</i> Fabricius | ---; ---; 256 | Kröber | 1939 |
| | ---; ---; 321 | Kröber | 1922 |
| | ---; ---; 345 | Olsuf'ev | 1937 |
| <i>SIRIDORHINA</i> | | | |
| <i>korosiceomana</i> Szilády | ---; ---; 143 | Szilády | 1926 |
| <i>zernyi</i> Szilády | ---; ---; 70 | Szilády | 1926 |
| <i>STIGMATOPHTHALMUS</i> | | | |
| <i>chrysurinus</i> Enderlein | ---; ---; 158 | Kröber | 1925 |
| <i>STYPORRHAMPUS</i> | | | |
| <i>bucolicus</i> Schiner | ---; ---; 139 | Kröber | 1939 |
| <i>buddah</i> Portschinsky | ---; ---; 353 | Kröber | 1939 |
| <i>chrysurinus</i> Enderlein | ---; ---; 158 | Kröber | 1939 |
| <i>chrysurus</i> Loew | ---; ---; 158 | Kröber | 1939 |
| <i>coquilletti</i> Shiraki | ---; ---; 158 | Kröber | 1939 |

TABLE 1 - HORSE FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|---|--------|------|
| <i>STYPORRHAMPIS</i> <i>coreanus</i> Shiraki | ---; ---; 168 | Kröber | 1939 |
| <i>yao</i> Macquart | ---; ---; 76 | Kröber | 1939 |
| <i>SZILADYNUS</i> <i>acuminatus</i> Loew | ---; ---; 150, 256, 353 | Kröber | 1939 |
| <i>agnitionalis</i> Austen | ---; ---; 342 | Kröber | 1939 |
| <i>altaianus</i> Szilády | ---; ---; 256 | Kröber | 1939 |
| <i>altaicus</i> Olsuf'ev | ---; ---; 256 | Kröber | 1939 |
| <i>angustipalpis</i> Olsuf'ev | ---; ---; 256, 353 | Kröber | 1939 |
| <i>arpadi</i> Szilády | ---; ---; 256 | Kröber | 1939 |
| <i>astur</i> Erichson | ---; ---; 168, 256, 345, 353 | Kröber | 1939 |
| <i>aterrimus</i> Meigen | ---; ---; 345 | Kröber | 1939 |
| <i>atripes</i> Kröber | ---; ---; 76 | Kröber | 1939 |
| <i>bimaculatus</i> Enderlein | ---; ---; 256 | Kröber | 1925 |
| <i>borealis</i> Loew | ---; ---; 256 | Kröber | 1939 |
| <i>borealis</i> <i>bimaculatus</i> Enderlein | ---; ---; 256 | Kröber | 1925 |
| <i>brevifrons</i> Kröber | ---; ---; 76 | Kröber | 1939 |
| <i>brevis</i> Loew | ---; ---; 76, 158, 256 | Kröber | 1939 |
| <i>caucasi</i> Szilády | ---; ---; 28, 345 | Kröber | 1939 |

TABLE 1 - HORSE FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|--------|------|
| <i>SZILADYNUS</i> <i>caucasicus</i> Enderlein | ---; ---; 345 | Kröber | 1925 |
| <i>confinis</i> Zetterstedt | ---; ---; 256 | Kröber | 1939 |
| <i>confinis</i> var. <i>nitidifrons</i> Szilády | ---; ---; 256 | Kröber | 1939 |
| <i>cuspidatus</i> Austen | ---; ---; 342 | Kröber | 1939 |
| <i>cyanops</i> Frauer | ---; ---; 302 | Kröber | 1939 |
| <i>decorus</i> Loew | ---; ---; 302, 342 | Kröber | 1939 |
| <i>decorus</i> var. <i>amani</i> Szilády | ---; ---; 350 | Kröber | 1939 |
| <i>decorus</i> var. <i>defaciatus</i> Szilády | ---; ---; 302 | Kröber | 1939 |
| <i>distinguendus</i> Verrall | ---; ---; 158, 256 | Kröber | 1939 |
| <i>flavipes</i> Wiedemann | ---; ---; 256 | Kröber | 1939 |
| <i>guttipennis</i> Enderlein | ---; ---; 256 | Kröber | 1925 |
| <i>hirticeps</i> Loew | ---; ---; 158, 256 | Kröber | 1939 |
| <i>hunnorum</i> Szilády | ---; ---; 162 | Kröber | 1939 |
| <i>komurae</i> Matsumura | ---; ---; 256 | Kröber | 1939 |
| <i>lapponicus</i> Wahlberg | ---; ---; 158, 180, 256 | Kröber | 1939 |
| <i>lapponicus</i> var. <i>albomaculatus</i> Zetterstedt | ---; ---; 256 | Kröber | 1939 |
| <i>lateralis</i> Meigen | ---; ---; 256 | Kröber | 1939 |

TABLE 1 - HORSE FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|---|--------|------|
| <i>SZILADYNUS</i> | | | |
| <i>luridus</i> Fallen | ---; ---; 256 | Kröber | 1939 |
| <i>mendicus</i> Billen | ---; ---; 342 | Kröber | 1939 |
| <i>montanus</i> Meigen | ---; ---; 158, 256 | Kröber | 1939 |
| <i>montanus</i> var. <i>flavicornis</i> Meigen | ---; ---; 256 | Kröber | 1939 |
| <i>mühlfeldi</i> Brauer | ---; ---; 162, 256, 350 | Kröber | 1939 |
| <i>nigellus</i> Szilády | ---; ---; 256 | Kröber | 1939 |
| <i>nigricauda</i> Olsuf'ev | ---; ---; 256 | Kröber | 1939 |
| <i>nigricornis</i> Zetterstedt | ---; ---; 162, 256 | Kröber | 1939 |
| <i>nigrivitta</i> Olsuf'ev | ---; ---; 256, 321, 353 | Kröber | 1939 |
| <i>pavlovskii</i> Olsuf'ev | ---; ---; 256, 353 | Kröber | 1939 |
| <i>polaris</i> Frey | ---; ---; 256 | Kröber | 1939 |
| <i>popovi</i> Olsuf'ev | ---; ---; 345 | Kröber | 1939 |
| <i>pulchri-ventris</i> Portschinsky | ---; ---; 353 | Kröber | 1939 |
| <i>reinigianus</i> Enderlein | ---; ---; 256, 353 | Kröber | 1939 |
| <i>sachalinensis</i> Enderlein | ---; ---; 256 | Kröber | 1925 |
| <i>sareptanus</i> Szilády | ---; ---; 256 | Kröber | 1939 |
| <i>sareptanus</i> var. <i>melas</i> Szilády | ---; ---; 256 | Kröber | 1939 |

TABLE 1 - HORSE FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|---|--------|------|
| <i>SZILADYNUS</i> | | | |
| <i>semipollinosus</i> Olsuf'ev | ---; ---; 166 | Kröber | 1939 |
| <i>shiraki</i> Enderlein | ---; ---; 76 | Kröber | 1925 |
| <i>shritnikovi</i> Olsuf'ev | ---; ---; 166 | Kröber | 1939 |
| <i>sibiricus</i> Enderlein | ---; ---; 256 | Kröber | 1925 |
| <i>silicicus</i> Enderlein | ---; ---; 350 | Kröber | 1925 |
| <i>solstitialis</i> Schiner | ---; ---; 256, 350 | Kröber | 1939 |
| <i>stenopselaphus</i> Olsuf'ev | ---; ---; 256 | Kröber | 1939 |
| <i>stigmopterus</i> Olsuf'ev | ---; ---; 168, 256 | Kröber | 1939 |
| <i>sven-hedini</i> Kröber | ---; ---; 76 | Kröber | 1939 |
| <i>tarandinoidea</i> Olsuf'ev | ---; ---; 194, 256, 353 | Kröber | 1939 |
| <i>tarandinus</i> Linnaeus | ---; ---; 77, 158, 256 | Kröber | 1939 |
| <i>tataricus</i> Fortschinsky | ---; ---; 76, 162, 256 | Kröber | 1939 |
| <i>tataricus</i> var. <i>aurantiacus</i> Szilády | ---; ---; 326 | Kröber | 1939 |
| <i>tataricus</i> var. <i>bicolor</i> Szilády | ---; ---; 76 | Kröber | 1939 |
| <i>tetracus</i> Szilády | ---; ---; 56, 345 | Kröber | 1939 |
| <i>tibetanus</i> Szilády | ---; ---; 76 | Kröber | 1939 |
| <i>tropicus</i> Panzer | ---; ---; 77, 158, 256 | Kröber | 1939 |

TABLE 1 - HORSE FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|---|-------------------------|-------|
| <i>SZILADYNUS</i> | | | |
| <i>tropicus</i> | | | |
| var. <i>bisignatus</i> Jaennicke | ---; ---; 256 | Kröber | 1939 |
| <i>tsing-vang</i> Szilady | ---; ---; 76 | Kröber | 1939 |
| <i>turanicus</i> Olsuf'ev | ---; ---; 318 | Kröber | 1939 |
| <i>turkestanus</i> Szilady | ---; ---; 162 | Kröber | 1939 |
| <i>turkestanus</i> var. <i>ater</i> Szilady | ---; ---; 162 | Kröber | 1939 |
| <i>turkestanus</i> var. <i>minor</i> Szilady | ---; ---; 162 | Kröber | 1939 |
| <i>ussuriensis</i> Olsuf'ev | ---; ---; 256 | Kröber | 1939 |
| <i>vulpes</i> Szilady | ---; ---; 342 | Kröber | 1939 |
| <i>vuvang</i> Szilady | ---; ---; 76 | Kröber | 1939 |
| <i>zonatus</i> Szilady | ---; ---; 326 | Kröber | 1939 |
| <i>TABANUS</i> | | | |
| <i>abacus</i> Bigot | ---; ---; 150, 345 | Kröber | 1925 |
| <i>abbreviatus</i> Bigot | ---; ---; 59, 77, 144, 146, 277 | Schuermans Stekhoven | 1926 |
| | ---; ---; 76 | Hwang | 1936 |
| | ---; ---; 77°. ---; ---; 143, 190 | Shiraki | 1938 |
| <i>abscondens</i> Walker | ---; ---; 59, 76, 144, 277 | Schuermans Stekhoven | 1926 |
| <i>aoallus</i> Szilady | ---; ---; 143 | Szilady | 1926 |
| <i>aocensus</i> Austen | ---; ---; 159° | Austen | 1920 |
| | ---; ---; 302, 342, 350 | Kröber | 1924a |

TABLE 1 - HORSE FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|-------------------------|---|-------------------------|-------|
| <i>TABANUS</i> | ---; ---; 162 | Szilády | 1923 |
| <i>accipiter</i> | | | |
| Szilády | ---; ---; 318 | Kröber | 1925 |
| | ---; ---; 326 | Olsuf'ev | 1937 |
| <i>acuminatus</i> | ---; ---; 256 | Kröber | 1925 |
| Loew | | | |
| <i>adjacens</i> | ---; ---; 150 | Kröber | 1925 |
| Ricardo | ---; ---; 235 | Senior-White | 1927 |
| <i>administrans</i> | ---; ---; 77, 158 | Shiraki | 1932 |
| Schiner | | | |
| <i>aetherus</i> | ---; ---; 294 (May bite man) | Olsuf'ev | 1937 |
| Bigot | | | |
| <i>aetherus</i> | | | |
| <i>sibiricus</i> | ---; ---; 256 | Anonymous | 1945a |
| Olsuf'ev | | | |
| <i>agnitionalis</i> | ---; ---; 154 | Austen | 1922 |
| Austen | ---; ---; 342 | Kröber | 1925 |
| <i>agnoscibilis</i> | ---; ---; 277 | Austen | 1922 |
| Austen | | | |
| <i>agrestis</i> | ---; ---; 76, 158, 350, 353 | Kröber | 1934 |
| Wiedemann | ---; ---; 256, 321 | Olsuf'ev | 1937 |
| <i>agricola</i> | ---; ---; 76 | Anonymous | 1945 |
| Wiedemann | ---; ---; 139, 159 | Schuermans Stekhoven | 1931 |
| <i>aino</i> | ---; ---; 256 | Kono & Takahasi | 1939b |
| Kono & Takahasi | | | |
| <i>albicans</i> | ---; ---; 25 | Kröber | 1925 |
| Macquart | | | |
| <i>albicaudus</i> | ---; ---; 35, 345 | Kröber | 1939 |
| Olsuf'ev | | | |
| <i>albicoctatus</i> | ---; ---; 146, 149 | Schuermans Stekhoven | 1926 |
| Schuurmans Stekhoven | | | |
| <i>albifascies</i> | ---; ---; 150, 342 | Kröber | 1925 |
| Loew | ---; ---; 159 | Austen | 1924 |

TABLE 1 - HORSE FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|-------------------------|---|----------------------|-------|
| <i>TABANUS</i> | ---; ---; 122 | de Mello & Afonso | 1921 |
| <i>albimedi</i> | ---; ---; 139 | Ricardo | 1916 |
| Walker | River bank; Feb.-June, Oct.; 143 | Fletcher | 1916 |
| | ---; Nov.-Jan.; 143 | Fletcher | 1920 |
| | ---; ---; 146 | Szilády | 1926 |
| | ---; ---; 235 | Senior-White | 1922 |
| <i>albipes</i> | ---; ---; 350 | Kröber | 1939 |
| Fabricius | | | |
| <i>albitriangularis</i> | ---; ---; 149, 190 | Schuermans Stekhoven | 1926 |
| Schuermans | | | |
| Stekhoven | | | |
| <i>albivittatus</i> | ---; ---; 146 | Schuermans Stekhoven | 1926 |
| Schuermans | ---; ---; 190 | Schuermans Stekhoven | 1928 |
| Stekhoven | | | |
| <i>albocostatus</i> | ---; ---; 143 | Senior-White | 1927 |
| Bigot | | | |
| <i>albofasciatus</i> | ---; ---; 143 | Senior-White | 1927 |
| Ricardo | | | |
| <i>albopruinosus</i> | ---; ---; 151 | Szilády | 1923 |
| Szilády | | | |
| <i>albopunctatus</i> | ---; ---; 146 | Schuermans Stekhoven | 1926 |
| Schuermans | | | |
| Stekhoven | | | |
| <i>alexandrinus</i> | ---; May; 154. ---; June; 174. ---; ---; 302 | Austen | 1920 |
| Wiedemann | ---; ---; 342 | Szilády | 1923 |
| <i>altianus</i> | ---; ---; 256 | Szilády | 1926 |
| Szilády | | | |
| <i>amaenus</i> | ---; ---; 76, 139, 353. ---; in uncultivated fields, in pastures near villages or town in daytime, Apr.-Sept.; 77. ---; Jul.-Sept.; 158 | Shiraki | 1918 |
| Walker | ---; ---; 168 | Barnett & Toshioka | 1951 |
| | ---; ---; 209 | Schuermans Stekhoven | 1931 |
| | ---; ---; 256 | Kröber | 1924a |

TABLE 1 - HORSE FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|----------------------------|---|--------------|-------|
| <i>TABANUS</i> | | | |
| <i>amaenus</i> | | | |
| <i>lateralis</i> | ---; ---; 158 | Kröber | 1925 |
| Shiraki | | | |
| <i>amoenatus</i> | ---; ---; 76 | Séguy | 1934 |
| Séguy | ---; ---; 144 | Hwang | 1936 |
| <i>amoenus</i> | ---; ---; 76, 77 | Schuermans | 1932b |
| Walker | | Stekhoven | |
| | ---; ---; 168 | Hsiao | 1948 |
| <i>andamanicus</i> | ---; ---; 11, 143, 218, 366, 367 | Schuermans | 1926 |
| Bigot | | Stekhoven | |
| <i>angusticornis</i> | ---; ---; 158 | Kröber | 1925 |
| Loew | | | |
| <i>angustilimbatus</i> | ---; ---; 70 | Senior-White | 1927 |
| Senior-White | | | |
| <i>angustilimbatus</i> | ---; ---; 70 | Szilády | 1926 |
| var. <i>particolor</i> | | | |
| Szilády | | | |
| <i>angustipalpis</i> | ---; ---; 256, 353 | Kono & | 1939 |
| Olsuf'ev | | Takahasi | |
| <i>angustistriatus</i> | ---; ---; 149 | Schuermans | 1926 |
| Schuermans | | Stekhoven | |
| Stekhoven | | | |
| <i>angustitriangularis</i> | ---; ---; 146, 149 | Schuermans | 1926 |
| Schuermans | | Stekhoven | |
| Stekhoven | | | |
| <i>angustiventer</i> | ---; ---; 146, 149 | Schuermans | 1926 |
| Schuermans | | Stekhoven | |
| Stekhoven | | | |
| <i>annamitus</i> | ---; ---; 144 | Schuermans | 1926 |
| Bigot | | Stekhoven | |
| <i>anthrax</i> | ---; ---; 150 | Kröber | 1939 |
| Olsuf'ev | | | |
| <i>appendicifer</i> | ---; ---; 318 | Kröber | 1939 |
| Szilády | | | |
| <i>appendiculatus</i> | ---; ---; 318 | Kröber | 1925 |
| Szilády | | | |

TABLE 1 - HORSE FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|---|-------------------------|-------|
| <i>TABANUS</i> | | | |
| <i>apricus</i> Meigen | ---; ---; 28, 256, 345 | Kröber | 1924a |
| <i>arabicus</i> Macquart | ---; ---; 25, 151 | Kröber | 1925 |
| <i>arenivagus</i> Austen | ---; September-November; 154 | Buxton | 1924 |
| | ---; in train; 154 | Austen | 1924 |
| | ---; ---; 302, 350 | Kröber | 1924a |
| | ---; Sept.-Oct., in tent, attracted by artificial light; 342° | Austen | 1920 |
| | Coast dunes; ---; 342 | Anonymous | 1944b |
| <i>argenteomaculatus</i> Kröber | ---; ---; 256 | Olsuf'ev | 1937 |
| | ---; ---; 326 | Kröber | 1939 |
| <i>argentsignatus</i> Schuurmans Stekhoven | ---; ---; 146 | Schuurmans Stekhoven | 1926 |
| <i>arisanus</i> Shiraki | ---; ---; 77° | Shiraki | 1918 |
| <i>armeniacus</i> Kröber | ---; ---; 28 | Kröber | 1939 |
| <i>arpadi</i> Szilády | ---; ---; 158 | Kono & Takahasi | 1939b |
| | ---; ---; 180 | Szilády | 1923 |
| | ---; June; 256 | Olsuf'ev | 1937 |
| <i>astur</i> Erichson | ---; ---; 168, 256, 353 | Kono & Takahasi | 1939a |
| <i>ater</i> Rossi | ---; ---; 317 | Austen | 1925 |
| | ---; ---; 350 | Kröber | 1925 |
| <i>aterrimus</i> Meigen | ---; ---; 345 | Kröber | 1925 |
| <i>atrimaculatus</i> Schuurmans Stekhoven | ---; ---; 145 | Schuurmans Stekhoven | 1932b |

TABLE 1 - HORSE FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|-------------------------|-------|
| <i>TABANUS</i> | | | |
| <i>atripes</i> Kröber | ---; ---; 76 | Hwang | 1936 |
| <i>atripilosus</i> Schuermans Stekhoven | ---; ---; 149 | Schuermans Stekhoven | 1926 |
| <i>atripunctatus</i> Schuermans Stekhoven | ---; ---; 146 | Schuermans Stekhoven | 1926 |
| <i>atri-signatus</i> Schuermans Stekhoven | ---; ---; 145 | Schuermans Stekhoven | 1926 |
| <i>atriventer</i> Schuermans Stekhoven | ---; ---; 145 | Schuermans Stekhoven | 1926 |
| <i>atrohirtus</i> Ricardo | ---; ---; 70, 149 | Schuermans Stekhoven | 1926 |
| | ---; ---; 190 | Senior-White | 1927 |
| <i>atropathenicus</i> Olsuf'ev | ---; ---; 345 | Kröber | 1939 |
| <i>aurantiacus</i> Schuermans Stekhoven | ---; ---; 145 | Schuermans Stekhoven | 1930 |
| <i>auribundus</i> Schuermans Stekhoven | ---; ---; 146 | Schuermans Stekhoven | 1926 |
| <i>aurioingulatus</i> Schuermans Stekhoven | ---; ---; 149 | Schuermans Stekhoven | 1932b |
| <i>aurifer</i> Schuermans Stekhoven | ---; ---; 146 | Schuermans Stekhoven | 1926 |
| <i>auriflamma</i> (Walker) | ---; ---; 143 | Senior-White | 1922 |
| <i>aurilineatus</i> Schuermans Stekhoven | ---; ---; 149, 190, 277 | Schuermans Stekhoven | 1926 |
| <i>aurisegmentatus</i> Schuermans Stekhoven | ---; ---; 143 | Schuermans Stekhoven | 1932b |
| <i>aurisparvus</i> Schuermans Stekhoven | ---; ---; 146 | Schuermans Stekhoven | 1926 |

TABLE 1 - HORSE FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|-------------------------|-------|
| <i>TABANUS</i> | --- | Senior-White | 1922 |
| <i>auristriatus</i> (Ricardo) | ---; ---; 59 | Schuurmans Stekhoven | 1926 |
| <i>auriventer</i> Schuurmans Stekhoven | ---; ---; 149 | Schuurmans Stekhoven | 1926 |
| <i>aurotestaceus</i> Walker | ---; ---; 76, 77, 144 | Wu | 1940 |
| <i>autumnalis</i> Linnaeus | ---; ---; 28, 317, 342, 345 | Kröber | 1924a |
| | ---; ---; 76 | Hwang | 1936 |
| | ---; ---; 150 | Leclercq | 1961 |
| | ---; ---; 154, 302, 350 | Austen | 1920 |
| | ---; rests on shady side of tree trunks at midday; 159 | Buxton | 1924 |
| | ---; ---; 162. ---; experimental transmission of tularemia; 256 | Olsuf'ev | 1937 |
| | ---; June-July; 256° | Skufin | 1949 |
| <i>autumnalis</i> <i>brunescens</i> Szilády | ---; ---; 150, 162 | Leclercq | 1961 |
| | ---; ---; 302, 350 | Kröber | 1925 |
| | ---; ---; 318, 326, 345 | Olsuf'ev | 1937 |
| <i>avittatus</i> Schuurmans Stekhoven | ---; ---; 143 | Schuurmans Stekhoven | 1926 |
| <i>badiocallosus</i> Kröber | ---; ---; 158 | Kröber | 1928 |
| <i>barnesi</i> Austen | ---; ---; 143, 277° | Austen | 1922 |
| <i>basalis</i> Macquart | ---; ---; 146, 149 | Schuurmans Stekhoven | 1926 |
| <i>basioallus</i> Szilády | ---; ---; 150 | Szilády | 1926 |
| <i>bicallosus</i> Ricardo | Along the banks of the river; March; 143 | Fletcher | 1921 |
| | ---; Nov.-Dec.; 143 | Fletcher | 1920 |
| <i>bioinotus</i> Ricardo | ---; March, July; 77° | Shiraki | 1918 |
| | ---; ---; 143, 190, 218, 365, 367 | Schuurmans Stekhoven | 1926 |

TABLE 1 - HORSE FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|---|-------------------------|-------|
| <i>TABANUS</i> | ---; ---; 256, 321 | Olsuf'ev | 1937 |
| <i>bifarius</i> Loew | ---; ---; 350 | Kröber | 1925 |
| <i>bifarius</i> var. <i>tauricus</i> Enderlein | ---; ---; 350 | Kröber | 1939 |
| <i>biguttatus</i> Wiedemann | ---; ---; 25 | Kröber | 1925 |
| <i>bilateralis</i> Schuurmans Stekhoven | ---; ---; 149 | Schuurmans Stekhoven | 1926 |
| <i>birmanicus</i> Bigot | ---; ---; 59, 77, 143, 144, 190, 277 | Schuurmans Stekhoven | 1926 |
| <i>bivittatus</i> Matsumura | ---; ---; 76 | Kröber | 1939 |
| | ---; ---; 77 | Szilády | 1922 |
| | ---; ---; 158 | Kono & Takahasi | 1939 |
| | ---; ---; 256 | Olsuf'ev | 1937 |
| <i>bombayensis</i> Schuurmans Stekhoven | ---; ---; 143 | Schuurmans Stekhoven | 1926 |
| <i>borealis</i> Loew | ---; ---; 256 | Kröber | 1925 |
| <i>bovinus</i> Loew | ---; ---; 28, 345 | Kröber | 1924a |
| | ---; ---; 143 | Isaac | 1925a |
| | ---; ---; 150, 342 | Kröber | 1939 |
| | ---; ---; 162, 256 | Sassuchin et al. | 1930 |
| | ---; June-July; 256° | Skufin | 1949 |
| <i>brevifrons</i> Kröber | ---; ---; 76 | Kröber | 1934 |
| <i>brevis</i> Loew | ---; ---; 76, 158, 168, 194, 256 | Kono & Takahasi | 1939a |
| <i>bromiolus</i> Szilády | ---; ---; 302, 317, 318 | Szilády | 1923 |

TABLE 1 - HORSE FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|------------------------|---|------------------|-------|
| <i>TABANUS</i> | ---; ---; 3 | Leclerq | 1961 |
| <i>bromius</i> | | | |
| Linnaeus | ---; ---; 28, 150, 151, 345, 354 | Kröber | 1924a |
| | ---; ---; 154° | Austen | 1924 |
| | ---; experimental transmission of tularemia; 162 | Olsuf'ev & Golov | 1936 |
| | ---; experimental transmission of tularemia; 256 (Attack man) | Olsuf'ev | 1937 |
| | ---; ---; 342 | Kröber | 1925 |
| <i>bromius</i> | ---; ---; 150, 303, 326 | Leclerq | 1961 |
| <i>flavofemoratus</i> | | | |
| Strobl | ---; ---; 345 | Olsuf'ev | 1937 |
| <i>bromius</i> | ---; ---; 342 | Kröber | 1939 |
| var. <i>nigricans</i> | | | |
| Szilády | ---; ---; 354 | Kröber | 1924a |
| <i>brunneocallosus</i> | ---; ---; 256 | Kröber | 1939 |
| Olsuf'ev | | | |
| <i>brunneothorax</i> | ---; hills and mountainous region; 147 | Schuermans | 1924 |
| Schuermans | | Stekhoven | |
| Stekhoven | | | |
| <i>brunnescens</i> | ---; ---; 28, 256, 302, 317, 342, 350 | Kröber | 1924a |
| Szilády | | | |
| <i>brunneus</i> | ---; ---; 145, 146, 190, 277 | Schuermans | 1928 |
| Macquart | | Stekhoven | |
| | ---; ---; 149 | Schuermans | 1926 |
| | | Stekhoven | |
| <i>brunnipennis</i> | ---; ---; 59, 143, 146, 277 | Schuermans | 1926 |
| (Ricardo) | | Stekhoven | |
| <i>brunnipes</i> | ---; ---; 143 | Roy & Brown | 1954 |
| Schuermans | | | |
| Stekhoven | ---; forests; 149 | Nieschulz | 1935 |
| <i>brunnitibiatus</i> | ---; ---; 76, 139 | Schuermans | 1931 |
| Schuermans | | Stekhoven | |
| Stekhoven | | | |
| <i>brunniventer</i> | ---; ---; 149 | Schuermans | 1926 |
| Schuermans | | Stekhoven | |
| Stekhoven | | | |

TABLE 1 - HORSE FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|---|-------------------------|-------|
| <i>TABANUS</i> | | | |
| <i>bubalophilus</i> Schuermans Stekhoven | ---; ---; 149 | Schuermans Stekhoven | 1926 |
| <i>bubbermani</i> Nieschulz | Small muddy pond; ---; 149 | Nieschulz | 1927 |
| <i>bucolicus</i> Schiner | ---; ---; 76 | Anonymous | 1945 |
| | ---; ---; 139 | Hsiao | 1945 |
| <i>budda</i> Portschinsky | ---; ---; 76, 168, 256, 353 | Kono & Takahasi | 1939a |
| <i>burmanense</i> Schuermans Stekhoven | ---; ---; 59, 144, 277 | Schuermans Stekhoven | 1926 |
| <i>caerulescens</i> Macquart | ---; ---; 146 | Schuermans Stekhoven | 1926 |
| <i>calidus</i> Walker | ---; ---; 31 | Schuermans Stekhoven | 1926 |
| <i>camelarius</i> Austen | ---; ---; 302, 342, 350 | Kröber | 1924a |
| <i>candidus</i> Ricardo | ---; ---; 77 | Shiraki | 1918 |
| <i>canipalpis</i> Bigot | ---; ---; 150, 151 | Kröber | 1924a |
| <i>canipus</i> Schuermans Stekhoven | ---; ---; 145, 149 | Schuermans Stekhoven | 1926 |
| <i>capito</i> Olsuf'ev | ---; ---; 28, 345 | Kröber | 1939 |
| <i>carabaghensis</i> Portschinsky | ---; ---; 31 | Kröber | 1925 |
| | ---; ---; 318, 345 | Olsuf'ev | 1937 |
| <i>caucasi</i> Szilády | ---; ---; 35 | Szilády | 1923 |
| | ---; ---; 345 | Kröber | 1925 |
| <i>caucasius</i> Kröber | ---; ---; 28, 256, 345 | Kröber | 1924a |
| <i>cepuricus</i> Surcouf | ---; ---; 144 | Surcouf | 1922 |

TABLE 1 - HORSE FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|--|--|-------------------------------|
| <i>TABANUS</i> | | | |
| <i>ceramensis</i> Schuurmans Stekhoven | ---; ---; 147 | Schuurmans Stekhoven | 1926 |
| <i>ceylonicus</i> Schiner | ---; ---; 70, 145, 146, 147, 149, 190, 277. ---; in town and jungle, rare; 280 | Schuurmans Stekhoven | 1926 |
| <i>ceylonicus</i> var. <i>ceylonicus</i> Schiner | ---; ---; 145, 149 | Schuurmans Stekhoven | 1932b |
| <i>ceylonicus</i> var. <i>nitidulus</i> Bigot | ---; ---; 145, 149 | Schuurmans Stekhoven | 1932b |
| <i>chloropis</i> Schuurmans Stekhoven | ---; ---; 146 | Schuurmans Stekhoven | 1926 |
| <i>christophi</i> Kröber | ---; ---; 150 | Kröber | 1928 |
| <i>chrysater</i> Schuurmans Stekhoven | ---; ---; 146, 149 | Schuurmans Stekhoven | 1926 |
| <i>chrysurus</i> Loew | ---; ---; 76, 353 ---; ---; 77, 158, 210 ---; July-Sept.; 158° ---; ---; 168, 256 | Kröber Schuurmans Stekhoven Shiraki Kono & Takahasi | 1924a 1931 1918 1939 |
| <i>cinerascens</i> MacLeay | ---; ---; 145 | Ricardo | 1914 |
| <i>cinnamomeus</i> Doleschall | ---; ---; 147 | Szilády | 1926 |
| <i>circumalbatus</i> Schuurmans Stekhoven | ---; ---; 145 | Schuurmans Stekhoven | 1932b |
| <i>otitripilosus</i> Schuurmans Stekhoven | ---; ---; 149 | Schuurmans Stekhoven | 1926 |
| <i>oohaerens</i> Walker | ---; ---; 147 | Oldroyd | 1948 |

TABLE 1 - HORSE FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--------------------------|--|--------------------|-------|
| <i>TABANUS</i> | --- | | |
| <i>confinis</i> | ---; ---; 168 | Barnett & Toshioka | 1951 |
| Zetterstedt | --- | | |
| | ---; May-June; 256° | Skufin | 1949 |
| | ---; ---; 256 | Olsuf'ev | 1937 |
| | ---; ---; 353 | Kono & Takahasi | 1939a |
| <i>confinus</i> | | | |
| <i>nitidifrons</i> | ---; ---; 256 | Anonymous | 1945a |
| Szilády | | | |
| <i>conformis</i> | ---; ---; 256 | Blagoveshchenskii | 1930 |
| Frey | | | |
| <i>confucius</i> | ---; ---; 76 | Hsiao | 1945 |
| Macquart | | | |
| <i>conicus</i> | ---; ---; 76, 143, 190 | Senior-White | 1927 |
| Bigot | | | |
| <i>consanguineus</i> | ---; ---; 143 | Senior-White | 1927 |
| Macquart | | | |
| <i>consocius</i> | ---; ---; 143 | Austen | 1922a |
| Walker | | | |
| <i>coquilletti</i> | ---; Aug. and Sept.; 158 | Shiraki | 1918 |
| Shiraki | | | |
| | ---; ---; 256 | Kröber | 1924a |
| <i>cordiger</i> | ---; ---; 76, 158, 302, 350 | Kröber | 1934 |
| Meigen | | | |
| | ---; ---; 150, 168 | Leclerq | 1961 |
| | ---; ---; 256, 317, 342 | Kröber | 1924a |
| | ---; ---; 345 | Olsuf'ev | 1937 |
| <i>coreanus</i> | ---; ---; 158, 168 | Kono & Takahasi | 1939a |
| Shiraki | | | |
| <i>crassinervis</i> | ---; ---; 318, 354 | Kröber | 1925 |
| Villen | | | |
| <i>crassus</i> | ---; ---; 59, 77, 139, 146, 190. Leaves of plants overhanging on water along river bank; all year; 143 | Isaac | 1924 |
| Walker | | | |
| <i>crocitinotipennis</i> | ---; ---; 143 | Schuermans | 1926 |
| Schuermans | | | |
| Stekhoven | | | |
| <i>ovoulus</i> | ---; ---; 318 | Kröber | 1925 |
| Szilády | | | |

TABLE 1 - HORSE FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|-------------------------|---|--------------|-------|
| <i>TABANUS</i> | ---; ---; 154, 159 | Austen | 1924 |
| <i>cuspidatus</i> | | | |
| Austen | ---; ---; 342 | Kröber | 1925 |
| <i>cylindricollosus</i> | ---; ---; 145 | Schuermans | 1926 |
| Schuermans | | Stekhoven | |
| Stekhoven | | | |
| <i>dalei</i> | ---; ---; 302, 342, 350 | Kröber | 1924a |
| Austen | ---; May; 342 | Austen | 1920 |
| <i>decoratus</i> | ---; ---; 143 | Szilády | 1926 |
| Szilády | | | |
| <i>decorus</i> | ---; ---; 154, 174, 302, 342 | Austen | 1920 |
| Loew | | | |
| <i>decorus</i> | | | |
| <i>cyanops</i> | ---; ---; 302 | Kröber | 1925 |
| Brauer | | | |
| <i>decorus</i> | ---; ---; 302 | Kröber | 1925 |
| <i>defasciatus</i> | ---; ---; 317 | Szilády | 1923 |
| Szilády | | | |
| <i>demellonis</i> | ---; ---; 143 | Senior-White | 1927 |
| Senior-White | | | |
| <i>discrepans</i> | ---; ---; 70 | Schuermans | 1926 |
| Ricardo | | Stekhoven | |
| <i>dissimilis</i> | ---; ---; 145, 149, 190, 280 | Schuermans | 1926 |
| Ricardo | ---; ---; 277 | Schuermans | 1928 |
| | | Stekhoven | |
| <i>distinguendus</i> | ---; ---; 158, 256 | Kono & | 1939 |
| (Verrall) | ---; ---; 162 | Takahasi | |
| | ---; June-July; 256° | Sassuchin | 1930 |
| | | et al. | |
| <i>ditaeniatus</i> | ---; ---; 31, 76, 139, 143, 150, 158 | Skufin | 1949 |
| Macquart | ---; ---; 151 | Wu | 1940 |
| | ---; ---; 235, 349 | Patton | 1919 |
| <i>diversifrons</i> | ---; ---; 143 | Senior-White | 1927 |
| Ricardo | ---; ---; 144 | Senior-White | 1927 |
| | | Szilády | 1926 |

TABLE 1 - HORSE FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|-------------------------|-------|
| <i>TABANUS</i> | | | |
| <i>dorsomaculatus</i> Macquart | ---; ---; 302, 342, 350 | Kröber | 1924a |
| <i>effilatus</i> Schuurmans Stekhoven | ---; ---; 146, 149, 190, 280 | Schuurmans Stekhoven | 1926 |
| | ---; ---; 149, 242 | Schuurmans Stekhoven | 1932b |
| | ---; ---; 277 | Schuurmans Stekhoven | 1928 |
| <i>eggeri</i> Schiner | ---; ---; 150, 342 | Senior-White | 1927 |
| | ---; in tent; 154 | Austen | 1920 |
| <i>eggeri</i> <i>prometheus</i> Szilády | ---; ---; 345 | Szilády | 1923 |
| <i>elegans</i> Schuurmans Stekhoven | ---; ---; 145 | Schuurmans Stekhoven | 1926 |
| <i>equicinctus</i> Schuurmans Stekhoven | ---; ---; 277 | Schuurmans Stekhoven | 1926 |
| <i>erberi</i> Brauer | ---; ---; 76 | Hsiao | 1945 |
| | ---; experimental transmission of tularemia; 162 | Olsuf'ev & Golov | 1936 |
| | ---; ---; 256, 326 | Olsuf'ev | 1937 |
| <i>erberi</i> var. <i>fuscipennis</i> Szilády | ---; ---; 76 | Hwang | 1936 |
| <i>erythrocephalus</i> van der Wulp | ---; ---; 147 | Oldroyd | 1948 |
| <i>esaki</i> Szilády | ---; ---; 158 | Shiraki | 1932 |
| <i>euphanes</i> Surcouf | ---; ---; 144 | Surcouf | 1921 |
| <i>exoelous</i> Ricardo | ---; ---; 143, 235 | Senior-White | 1922 |
| <i>exolusus</i> Pandelle | ---; ---; 302, 342, 350 | Kröber | 1924a |
| <i>exotious</i> Ricardo | ---; 76, 77, 158, 256, 353 | Kröber | 1924a |
| | ---; in pastures, woods and bushes, near streams, May-Aug.; 77° | Shiraki | 1918 |

TABLE 1 - HORSE FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|-------------------------|------|
| <i>TABANUS</i> | | | |
| <i>exoticus</i> | | | |
| <i>fulvipes</i> Szilády | ---; ---; 70 | Szilády | 1926 |
| <i>explicatus</i> Walker | ---; ---; 143 | Senior-White | 1927 |
| <i>extricans</i> Walker | ---; ---; 147 | Schuurmans Stekhoven | 1926 |
| <i>factiosus</i> Walker | ---; ---; 145, 242 | Schuurmans Stekhoven | 1926 |
| <i>farinosus</i> Szilády | ---; ---; 25, 302 | Kröber | 1939 |
| <i>felderi</i> van der Wulp | ---; ---; 76, 139 | Hwang | 1936 |
| <i>fenestratus</i> Schuurmans Stekhoven | ---; ---; 139 | Schuurmans Stekhoven | 1926 |
| <i>filipjevi</i> Olsuf'ev | ---; ---; 162 | Kröber | 1939 |
| <i>finalis</i> Walker | ---; ---; 277 | Austen | 1922 |
| <i>flaviannulatus</i> Schuurmans Stekhoven | ---; ---; 145, 149 | Schuurmans Stekhoven | 1932 |
| <i>flavioinotus</i> Ricardo | ---; ---; 143 | Schuurmans Stekhoven | 1926 |
| <i>flavioornis</i> Schuurmans Stekhoven | ---; ---; 149 | Schuurmans Stekhoven | 1926 |
| <i>flavimarginatus</i> Schuurmans Stekhoven | ---; ---; 76, 139 | Schuurmans Stekhoven | 1931 |
| <i>flavimediis</i> Schuurmans Stekhoven | ---; ---; 143, 218, 366, 367 | Schuurmans Stekhoven | 1926 |
| <i>flavipennis</i> Ricardo | ---; hill and mountainous region, prefers moist places; 147 | Schuurmans Stekhoven | 1924 |
| <i>flavipes</i> Wiedemann | ---; ---; 256 | Olsuf'ev | 1937 |

TABLE 1 - HORSE FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|-------------------------|------|
| <i>TABANUS</i> | | | |
| <i>flavipilosus</i> Schuurmans Stekhoven | ---; ---; 145 | Schuurmans Stekhoven | 1926 |
| <i>flavipus</i> Schuurmans Stekhoven | ---; ---; 143 | Schuurmans Stekhoven | 1926 |
| <i>flaviscutellatus</i> Schuurmans Stekhoven | ---; forests; 149 | Nieschulz | 1935 |
| <i>flaviseimus</i> Ricardo | ---; ---; 70 | Schuurmans Stekhoven | 1926 |
| <i>flavistriatus</i> Schuurmans Stekhoven | ---; ---; 146, 149 | Schuurmans Stekhoven | 1926 |
| <i>flavitibiatus</i> Schuurmans Stekhoven | ---; ---; 149 | Schuurmans Stekhoven | 1926 |
| <i>flavitriangularis</i> Schuurmans Stekhoven | ---; ---; 149 | Schuurmans Stekhoven | 1926 |
| <i>flaviventris</i> Bigot | ---; ---; 59, 70, 143, 242 | Arover | 1924 |
| | ---; ---; 235 | Szilády | 1926 |
| <i>flavivittatus</i> Schuurmans Stekhoven | ---; in mountainous regions; 146 | Schuurmans Stekhoven | 1926 |
| <i>flavoguttatus</i> Szilády | ---; experimental transmission of tularemia; 162 | Olsuf'ev & Golov | 1936 |
| | ---; ---; 326 | Olsuf'ev | 1937 |
| <i>flavoguttatus</i> <i>quadripunctatus</i> Szilády | ---; ---; 345 | Krüber | 1925 |
| <i>flavothorax</i> Ricardo | ---; ---; 139 | Hwang | 1936 |
| | ---; ---; 149, 190, 280 | Schuurmans Stekhoven | 1926 |
| <i>flebilis</i> Walker | ---; ---; 145, 242 | Schuurmans Stekhoven | 1926 |
| | ---; ---; 147 | Szilády | 1926 |
| <i>fontinalis</i> Schuurmans Stekhoven | ---; ---; 149 | Schuurmans Stekhoven | 1926 |

TABLE 1 - HORSE FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--------------------------------------|--|---|-------------------------------|
| <i>TABANUS</i> | | | |
| <i>formosiensis</i> Ricardo | ---; May-July; 77 | Shiraki | 1918 |
| <i>fraseri</i> Austen | ---; ---; 317 | Austen | 1925 |
| <i>freyi</i> Szilády | ---; ---; 354 | Kröber | 1936 |
| <i>fulvicinctus</i> Ricardo | ---; mountains; 77°. ---; ---; 158 | Shiraki | 1918 |
| <i>fulvicornis</i> Meigen | ---; May-June; 256 ---; June-Aug.; 256° | Olsuf'ev. Skufin | 1937 1949 |
| <i>fulvimeidioides</i> Shiraki | ---; ---; 77 ---; Apr.-Aug.; 158. ---; ---; 256 | Kröber Kröber | 1925 1924a |
| <i>fulvimeidius</i> Walker | ---; ---; 59, 76, 143, 218 ---; mountains, Apr.-May; 77 | Wu Shiraki | 1940 1918 |
| <i>fulvissimus</i> Rondani | ---; ---; 145, 146, 149 | Schuermans Stekhoven | 1926 |
| <i>fulvus</i> Meigen | ---; ---; 76 ---; ---; 158. ---; ---; 256, 350 ---; ---; 162 ---; July-August; 256° | Wu Edwards et al. Olsuf'ev Skufin | 1940 1939 1937 1949 |
| <i>funicus</i> Austen | ---; around lamp at night; 151 | Austen | 1923 |
| <i>funicifer</i> Walker | ---; ---; 144 ---; ---; 145 ---; ---; 146, 280. ---; all year aboard steamer; 149. ---; aboard steamer; 190 ---; ---; 242, 337 | Séguy Schuermans Stekhoven Schuermans Stekhoven Kröber | 1934 1932b 1926 1934 |
| <i>fumipennis</i> van der Wulp | ---; ---; 149 | Schuermans Stekhoven | 1926 |
| <i>furunculigenus</i> Dolweschall | ---; ---; 147 | Szilády | 1926 |

TABLE 1 - HORSE FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|-------------------------|-------|
| <i>TABANUS</i> | | | |
| <i>fuscibarbus</i> Schuermans Stekhoven | ---; ---; 149 | Schuermans Stekhoven | 1926 |
| <i>fuscicauda</i> (Bigot) | ---; ---; 11, 59, 70, 149 | Senior-White | 1922 |
| <i>fuscicornis</i> Ricardo | ---; ---; 77 | Shiraki | 1918 |
| <i>fuscicrura</i> Bigot | ---; ---; 70 | Senior-White | 1927 |
| <i>fuscifrons</i> Schuermans Stekhoven | ---; ---; 145 | Schuermans Stekhoven | 1926 |
| <i>fuscithorax</i> Schuermans Stekhoven | ---; ---; 149 | Schuermans Stekhoven | 1926 |
| <i>fusciventer</i> Schuermans Stekhoven | ---; ---; 149 | Schuermans Stekhoven | 1926 |
| <i>fuscomaculatus</i> (Ricardo) | ---; ---; 59, 143, 218 | Senior-White | 1922 |
| | ---; ---; 145 | Szilády | 1926 |
| <i>galloisi</i> Kono & Takahasi | ---; ---; 168 | Hsiao | 1948 |
| <i>geminus</i> Szilády | ---; ---; 194 | Hsiao | 1946 |
| | ---; ---; 256 | Szilády | 1923 |
| <i>geniculatus</i> van der Wulp | ---; ---; 145 | Schuermans Stekhoven | 1926 |
| | ---; ---; 149 | Schuermans Stekhoven | 1926 |
| <i>gerokei</i> Brauer | ---; ---; 28, 256, 302, 342, 345, 350 | Krüber | 1924a |
| | ---; ---; 353 | Krüber | 1934 |
| <i>gigas</i> Herbst | ---; ---; 154, 256, 302, 350. ---; in marsh; 342 | Austen | 1920 |
| | ---; April; 159 | Buxton | 1924 |
| <i>gigas</i> var. <i>rufula</i> Szilády | ---; ---; 350 | Krüber | 1939 |

TABLE 1 - HORSE FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|-------------------------|---------------|
| <i>TABANUS</i> | | | |
| <i>gigas</i> | | | |
| var. <i>trigonellum</i> Szilády | ---; ---; 342 | Kröber | 1939 |
| <i>gilvus</i> Schuurmans Stekhoven | ---; ---; 149 | Schuurmans Stekhoven | 1926 |
| <i>glaber</i> Bigot | ---; ---; 3, 28, 143, 150, 162, 256, 345 Creek banks; common, July-Nov.; 151 | Kröber Patton | 1924a 1920 |
| | ---; ---; 235 | Senior-White | 1927 |
| <i>glaucopsis</i> Meigen | ---; ---; 256° | Skufin | 1949 |
| | ---; ---; 256 | Kröber | 1939 |
| | ---; ---; 294 | Olsuf'ev | 1937 |
| <i>glaucopsis</i> var. <i>cognatus</i> Loew | ---; ---; 174, 302, 342, 350 | Kröber | 1924a |
| <i>glaucus</i> Meigen | ---; ---; 256 | Sassuchin et al. | 1930 |
| <i>golovi</i> Olsuf'ev | ---; ---; 162 | Olsuf'ev & Golov | 1936 |
| | ---; ---; 166 | Kröber | 1939 |
| <i>golovi</i> var. <i>pallidus</i> Olsuf'ev | ---; ---; 162 | Kröber | 1939 |
| <i>graeus</i> Fabricius | ---; ---; 28, 256, 302, 317, 342, 345, 350 | Kröber | 1924a |
| <i>grandis</i> Szilády | ---; ---; 350 | Kröber | 1925 |
| <i>gratus</i> Loew | ---; ---; 342 | Kröber | 1939 |
| <i>griseifacies</i> Schuurmans Stekhoven | ---; ---; 70, 143 | Schuurmans Stekhoven | 1926 |
| <i>griseipalpis</i> Schuurmans Stekhoven | ---; ---; 59, 144, 146, 149, 277 | Schuurmans Stekhoven | 1926 |
| | ---; ---; 145 | Schuurmans Stekhoven | 1932b |

TABLE 1 - HORSE FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|-------------------------|-------|
| <i>TABANUS</i> | | | |
| <i>griseithorax</i> Schuermans Stekhoven | ---; ---; 149 | Schuermans Stekhoven | 1926 |
| <i>griseoscutellatus</i> Kröber | ---; ---; 242 | Kröber | 1924 |
| <i>griseus</i> Kröber | ---; ---; 256 | Kröber | 1928 |
| <i>griseus</i> <i>griseus</i> Kröber | ---; ---; 158, 168, 256, 326 | Kono & Takahasi | 1939a |
| <i>griseus</i> <i>pallidiventris</i> Olsuf'ev | ---; ---; 76, 168 | Kono & Takahasi | 1939a |
| <i>hilaris</i> Walker | ---; ---; 139 | Ricardo | 1916 |
| | ---; May; 143 | Fletcher | 1916 |
| <i>hirticeps</i> Loew | ---; ---; 77 | Shiraki | 1932 |
| | ---; ---; 153 | Kröber | 1925 |
| <i>hirtipalpis</i> Ricardo | ---; ---; 218 | Senior-White | 1927 |
| <i>hirtistriatus</i> Ricardo | ---; ---; 59 | Senior-White | 1922 |
| | ---; ---; 145 | Schuermans Stekhoven | 1932b |
| | ---; ---; 149, 190 | Schuermans Stekhoven | 1926 |
| <i>hirtus</i> Walker | ---; ---; 143 | Senior-White | 1927 |
| <i>hoang</i> Macquart | ---; ---; 76 | Wu | 1940 |
| <i>hongkongensis</i> Ricardo | ---; ---; 76, 139 | Hwang | 1936 |
| <i>horvathi</i> Szilády | ---; ---; 158 | Kröber | 1939 |
| <i>humilis</i> Coquillett | ---; in mountainous areas; 138° | Shiraki | 1918 |
| | ---; ---; 158, 256 | Kröber | 1924a |

TABLE 1 - HORSE FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|-------------------------|-------|
| <i>TABANUS</i> | | | |
| <i>humillimus</i> Walker | ---; ---; 145, 146 | Schuermans Stekhoven | 1926 |
| <i>humorum</i> Szilády | ---; ---; 162, 256 | Olsuf'ev | 1937 |
| | ---; ---; 166 | Kröber | 1925 |
| <i>hybridus</i> Wiedemann | ---; ---; 59, 76, 139, 235 | Hsiao | 1945 |
| | ---; ---; 143, 145, 185, 190, 218, 366, 367. ---; in jungle; 149 | Schuermans Stekhoven | 1926 |
| | Brackish, running, stagnant water in forests, marshes; ---; 149 | Nieschulz | 1926 |
| <i>hypomacros</i> Surcouf | ---; ---; 144 | Surcouf | 1921 |
| <i>iostericus</i> Surcouf | ---; ---; 144 | Surcouf | 1921 |
| <i>ignobilis</i> Rondani | ---; ---; 145 | Schuermans Stekhoven | 1926 |
| | ---; ---; 149 | Schuermans Stekhoven | 1932b |
| <i>immanis</i> Wiedemann | ---; ---; 59, 144, 145, 190, 277. ---; all year, 149 | Schuermans Stekhoven | 1926 |
| | ---; rare; 146. ---; at edge of forest, and in forest; 149 | Nieschulz | 1935 |
| <i>immixtus</i> Walker | ---; ---; 145 | Schuermans Stekhoven | 1926 |
| <i>imparicallosus</i> Schuermans Stekhoven | ---; ---; 143 | Schuermans Stekhoven | 1926 |
| <i>inaequannulatus</i> Schuermans Stekhoven | ---; ---; 147 | Schuermans Stekhoven | 1932b |
| <i>inaequatus</i> Austen | ---; ---; 151 | Kröber | 1925 |
| <i>inoulus</i> van der Wulp | ---; ---; 149 | Schuermans Stekhoven | 1926 |

TABLE 1 - HORSE FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|------------------------|---|----------------------|-------|
| <i>TABANUS</i> | --- | | |
| <i>indianus</i> | ---; ---; 76, 77, 139, 143 | Wu | 1940 |
| Ricardo | --- | | |
| | ---; ---; 144, 145 | Szilády | 1926 |
| | ---; ---; 342 | de Mello & Afonso | 1921 |
| <i>indifferens</i> | --- | | |
| Szilády | ---; ---; 143 | Szilády | 1926 |
| <i>indiscriminatus</i> | --- | | |
| Ricardo | ---; ---; 70 | Senior-White | 1927 |
| <i>infamis</i> | --- | | |
| Szilády | ---; ---; 145 | Szilády | 1926 |
| <i>inflatipalpis</i> | --- | | |
| Schuermans | ---; ---; 70 | Schuermans | |
| Stekhoven | | Stekhoven | 1926 |
| <i>ingens</i> | --- | | |
| Schuermans | ---; ---; 149 | Schuermans | |
| Stekhoven | | Stekhoven | 1926 |
| <i>innequannulatus</i> | --- | | |
| Schuermans | ---; ---; 147 | Schuermans | |
| Stekhoven | | Stekhoven | 1932b |
| <i>inobservatus</i> | --- | | |
| Ricardo | ---; ---; 149 | Schuermans | |
| | | Stekhoven | 1926 |
| <i>insecutor</i> | --- | | |
| Austen | ---; grassy plain; 154 | Austen | 1920 |
| | ---; ---; 159 | Austen | 1924 |
| | ---; ---; 342 | Krüber | 1925 |
| <i>insidiator</i> | --- | | |
| Austen | ---; ---; 59, 144. ---; very common in the jungle; 277 ^a | Schuermans | |
| | | Stekhoven | 1926 |
| <i>insurgens</i> | --- | | |
| Walker | ---; ---; 147 | Schuermans | |
| | | Stekhoven | 1926 |
| <i>intermedius</i> | --- | | |
| Egger | ---; ---; 150, 151, 302, 317, 342, 350. ---; July-Sept.; 154 | Krüber | 1924a |
| <i>intermedius</i> | --- | | |
| <i>prometheus</i> | ---; ---; 345 | Krüber | 1925 |
| Szilády | | | |
| <i>internus</i> | --- | | |
| Walker | ---; ---; 143 | Schuermans | |
| | | Stekhoven | 1926 |
| | ---; ---; 146 | Senior-White | 1927 |

TABLE 1 - HORSE FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--------------------------------------|---|-------------------------|-------|
| <i>TABANUS</i> | | | |
| <i>invalidus</i> Szilády | ---; ---; 280 | Szilády | 1926 |
| <i>iyomensis</i> Shiraki | ---; July-Aug.; 158 | Shiraki | 1918 |
| | ---; ---; 256 | Kröber | 1924a |
| <i>izion</i> Osten Sacken | ---; ---; 149 | Kröber | 1924 |
| | ---; ---; 242 | Bezzi | 1913 |
| <i>japonicus</i> Bigot | ---; ---; 158 | Séguy | 1934 |
| <i>iridus</i> Bigot | ---; ---; 143 | Senior-White | 1927 |
| <i>juvundus</i> Walker | ---; ---; 70, 76, 139, 143, 235 | Schuermans Stekhoven | 1931 |
| <i>kakhyensis</i> Senior-White | ---; ---; 59 | Senior-White | 1922 |
| <i>karenkoensis</i> Shiraki | ---; ---; 77 | Shiraki | 1932 |
| <i>karyhenthinus</i> Szilády | ---; experimental transmission of tularemia; 162 | Olsuf'ev & Golov | 1936 |
| | ---; ---; 256, 326 | Olsuf'ev | 1937 |
| | ---; ---; 317, 318, 353 | Kröber | 1939 |
| <i>kertesszi</i> Szilády | ---; ---; 154 | Austen | 1922 |
| | ---; ---; 256, 342 | Kröber | 1939 |
| <i>kervillei</i> Surcouf | ---; ---; 302, 342, 350 | Kröber | 1924a |
| <i>ketonensis</i> Kono & Takahasi | ---; ---; 256 | Kono & Takahasi | 1939b |
| <i>khasiensis</i> Ricardo | ---; ---; 143, 149, 190, 218, 366, 367 | Schuermans Stekhoven | 1926 |
| | ---; ---; 277 | Senior-White | 1927 |
| <i>kiangsuenensis</i> Kröber | ---; ---; 16 | Hwang | 1936 |
| <i>kingi</i> Austen | ---; ---; 302, 342, 350 | Kröber | 1924a |

TABLE 1 - HORSE FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|---|-------------------------|-------|
| <i>TABANUS</i> | | | |
| <i>kinoshitai</i> Kono & Takahasi | ---; ---; 158 | Kono & Takahasi | 1939b |
| <i>kotoshoensis</i> Shiraki | ---; ---; 77° | Shiraki | 1918 |
| <i>laoteipennis</i> Packer | ---; ---; 150 | Krüber | 1925 |
| <i>laetitinctus</i> Becker' | ---; ---; 150, 151 | Krüber | 1924a |
| | ---; ---; 318 | Szilády | 1923 |
| <i>laevigatus</i> Szilády | ---; ---; 31 | Krüber | 1939 |
| <i>Lama</i> Portschinsky | ---; ---; 76, 353 | Krüber | 1924a |
| | ---; ---; 210 | Schuermans Stekhoven | 1931 |
| <i>laotianus</i> Bigot | ---; ---; 143 | Schuermans Stekhoven | 1926 |
| | ---; ---; 144 | Austen | 1922 |
| <i>lapponicus</i> Wahlberg | ---; ---; 158, 256 | Kono & Takahasi | 1939 |
| <i>Lapponicus</i> <i>albomaculatus</i> Zetterstedt | ---; ---; 256 | Krüber | 1925 |
| <i>lateralbus</i> Schuurmans Stekhoven | ---; ---; 143 | Schuermans Stekhoven | 1932b |
| <i>lateralis</i> Meigen | ---; ---; 158, 256 | Krüber | 1924a |
| <i>latioinctus</i> Schuurmans Stekhoven | ---; ---; 143, 218, 365, 367 | Schuermans Stekhoven | 1926 |
| <i>latifascies</i> Schuurmans Stekhoven | ---; ---; 145 | Schuermans Stekhoven | 1926 |
| <i>latifrons</i> Schuurmans Stekhoven | ---; ---; 143 | Schuermans Stekhoven | 1926 |
| <i>latistriatus</i> Brauer | ---; ---; 318 | Krüber | 1939 |

TABLE 1 - HORSE FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|--|-------------------------|---------------|
| <i>TABANUS</i> | | | |
| <i>lativenter</i> Schuurmans Stekhoven | ---; ---; 145, 146 | Schuurmans Stekhoven | 1926 |
| <i>latus</i> Szilády | ---; ---; 59 | Szilády | 1926 |
| <i>leleayi</i> Austen | ---; ---; 28, 150, 256, 302, 345, 350, 354. ---; July; 143. ---; April-June; 151. ---; rocky bank; 159 | Kröber Austen | 1924a 1920 |
| | ---; ---; 143, 151, 342 | Austen | 1923 |
| | ---; Apr.-Aug.; 159 | Buxton | 1924 |
| | ---; ---; 162 | Olsuf'ev | 1937 |
| | ---; ---; 317 | Austen | 1925 |
| <i>lentisignatus</i> Schuurmans Stekhoven | ---; ---; 145, 190 | Schuurmans Stekhoven | 1926 |
| <i>leucozonematus</i> Bigot | ---; ---; 59, 143 | Senior-White | 1922 |
| <i>leucochirtus</i> Ricardo | ---; ---; 143 | Senior-White | 1927 |
| <i>leucopogon</i> Bigot | ---; ---; 143 | Senior-White | 1927 |
| <i>leucocephareus</i> Bigot | ---; ---; 144 | Austen | 1922 |
| <i>loayyi</i> Szilády | ---; ---; 146 | Szilády | 1926 |
| <i>longibasalis</i> Schuurmans Stekhoven | ---; ---; 76, 139 | Schuurmans Stekhoven | 1926 |
| <i>longicornis</i> Schuurmans Stekhoven | ---; near the shore; 146 | Schuurmans Stekhoven | 1926 |
| <i>longirostris</i> Schuurmans Stekhoven | ---; ---; 149 | Schuurmans Stekhoven | 1926 |
| <i>lucifer</i> Szilády | ---; ---; 31, 76 | Holac | 1945 |

TABLE 1 - HORSE FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|------------------------|--|------------|-------|
| <i>TABANUS</i> | ---; April-May; 154. ---; April; 159, 342 | Buxton | 1924 |
| <i>lunatus</i> | | | |
| Fabricius | ---; ---; 317, 350 | Austen | 1925 |
| | ---; ---; 345 | Kröber | 1939 |
| <i>lunatus</i> | | | |
| var. <i>bactrianus</i> | ---; ---; 326 | Kröber | 1939 |
| Olsuf'ev | | | |
| <i>lunatus</i> | | | |
| var. <i>labaeanus</i> | ---; ---; 350 | Kröber | 1939 |
| Enderlein | | | |
| <i>lunatus</i> | | | |
| var. <i>politus</i> | ---; ---; 302 | Kröber | 1925 |
| Szilády | | | |
| <i>lunatus</i> | | | |
| <i>syriacus</i> | ---; ---; 302 | Kröber | 1925 |
| Szilády | | | |
| <i>luridus</i> | | | |
| Fallen | ---; ---; 162 | Szilády | 1923 |
| | ---; common, May; 256 | Olsuf'ev | 1937 |
| | ---; ---; 256° | Skufin | 1949 |
| <i>maocer</i> | On low foliage overhanging water, damp earth a few inches above edge of water; March-April, July, Oct.-Nov.; 143 | Isaac | 1925 |
| Bigot | | | |
| <i>maefarlanei</i> | ---; ---, 76, 139 | Wu | 1940 |
| Ricardo | | | |
| <i>maoulioorntis</i> | Swampy ground, river or lake banks, edge of forest; most active between 6:00 and 7:00 p.m.; 256° | Fraser | 1920 |
| Zetterstedt | | | |
| | ---; May-June; 256 | Olsuf'ev | 1937 |
| <i>madoerensis</i> | ---; ---; 146 | Schuermans | |
| Schuermans | | Stekhoven | 1926 |
| Stekhoven | | | |
| <i>major</i> | ---; ---; 256 | Sassuchin | |
| Evermann | | et al. | 1930 |
| <i>malayensis</i> | ---; ---; 145 | Schuermans | |
| Ricardo | | Stekhoven | 1932b |
| | ---; rare; 146 | Nieschulz | 1935 |
| | ---; ---; 149, 190, 280 | Schuermans | |
| | | Stekhoven | 1926 |
| | ---; ---; 242 | Kröber | 1924 |

TABLE 1 - HORSE FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--------------------------|---|--------------------|-------|
| <i>TABANUS</i> | ---; ---; 76, 139, 158. ---; Apr.-Aug.; 77° | Shiraki | 1918 |
| <i>mandarinus</i> | | | |
| Schiner | ---; ---; 77, 194 | Kono ; Takahasi | 1939 |
| | ---; ---; 168 | Hsiao | 1948 |
| | ---; ---; 256, 353 | Kröber | 1924 |
| <i>manfarinus</i> | ---; ---; 76, 77, 139, 158 | Schuermans | |
| Schiner | | Stekhoven | 1931 |
| <i>manipurensis</i> | ---; ---; 143 | Senior-White | 1927 |
| Ricardo | | | |
| <i>martinii</i> | ---; ---; 31 | Kröber | 1939 |
| Kröber | | | |
| <i>matsumuras</i> | ---; ---; 158 | Shiraki | 1932 |
| Szilády | | | |
| <i>mediatrimaculatus</i> | ---; ---; 144 | Schuermans | |
| Schuermans | | Stekhoven | 1932b |
| Stekhoven | | | |
| <i>melanognathus</i> | ---; ---; 59, 143, 144, 277 | Schuermans | |
| Bigot | | Stekhoven | 1926 |
| <i>melanopygatus</i> | ---; ---; 242 | Kröber | 1924 |
| Bigot | | | |
| <i>mendicus</i> | ---; ---; 154 | Austen | 1922b |
| Villeneuve | | | |
| | ---; April; 302. ---; on bank of stream; 342 | Austen | 1920 |
| <i>mentitus</i> | ---; ---; 76 | Hsiao | 1945 |
| Walker | | | |
| <i>miki</i> | ---; ---; 150 | Kröber | 1939 |
| Brauer | | | |
| | ---; June-July; 256° | Skufin | 1949 |
| | ---; ---; 256 | Anonymous | 1945a |
| | ---; ---; 345 | Olsuf'ev | 1937 |
| <i>miki</i> | | | |
| var. <i>niger</i> | ---; ---; 345 | Kröber | 1939 |
| Olsuf'ev | | | |
| <i>minus</i> | ---; ---; 145, 146, 190. ---; all year; 149 | Schuermans | |
| van der Wulp | | Stekhoven | 1926 |
| | ---; common; 149 | Nieschulz | 1935 |

TABLE 1 - HORSE FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|----------------------|---|-----------------|-------|
| <i>TABANUS</i> | ---; ---; 256° | Gutzevich | 1947 |
| <i>miser</i> | | | |
| <i>Szilády</i> | ---; ---; 256 | Olsuf'ev | 1937 |
| <i>mistshenkoi</i> | ---; ---; 303 | Krüber | 1939 |
| <i>Olsuf'ev</i> | | | |
| <i>mixtus</i> | ---; ---; 302, 317, 333, 342 | Krüber | 1924a |
| <i>Szilády</i> | ---; ---; 345, 350 | Krüber | 1925 |
| <i>miyajima</i> | ---; ---; 158, 256 | Krüber | 1924a |
| <i>Ricardo</i> | | | |
| <i>miyakei</i> | ---; ---; 77 | Shiraki | 1918 |
| <i>Shiraki</i> | | | |
| <i>mongolensis</i> | ---; ---; 353 | Krüber | 1934 |
| <i>Krüber</i> | | | |
| <i>monilifer</i> | ---; ---; 143 | Schuermans | |
| <i>Bigot</i> | | Stekhoven | 1926 |
| <i>monogolensis</i> | ---; ---; 76 | Hwang | 1936 |
| <i>Bigot</i> | | | |
| <i>monotaeniatum</i> | ---; ---; 59, 76, 143 | Wu | 1940 |
| <i>(Bigot)</i> | ---; ---; 146 | Schuermans | |
| | | Stekhoven | 1926 |
| | ---; ---; 147 | Schuermans | |
| | | Stekhoven | 1924 |
| <i>montanum</i> | ---; ---; 76 | Krüber | 1934 |
| <i>Meigen</i> | ---; ---; 101 | Dampf | 1924 |
| | ---; ---; 158, 170, 353 | Kono & Takahasi | 1939b |
| | ---; July-Aug.: 256° | Skufin | 1949 |
| | ---; June; 256 | Olsuf'ev | 1937 |
| <i>morgani</i> | ---; ---; 150, 151 | Krüber | 1924a |
| <i>Surcouf</i> | | | |
| <i>morio</i> | ---; ---; 345 | Krüber | 1939 |
| <i>Meigen</i> | | | |
| <i>moehasi</i> | ---; ---; 150 | Leclercq | 1962 |
| <i>Leclercq</i> | | | |

TABLE 1 - HORSE FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|------------------------|--|--------------|-------|
| <i>TABANUS</i> | --- | Kröber | 1925 |
| <i>muhlfeldi</i> | ---; ---; 162, 256 | | |
| Brauer | --- | Kröber | 1934 |
| <i>multicinctus</i> | --- | Schuermans | 1926 |
| Schuermans | ---; ---; 146, 149, 277 | Stekhoven | |
| Stekhoven | | | |
| <i>napaensis</i> | --- | Nieschulz | 1927 |
| Nieschulz | ---; ---; 149 | | |
| <i>negativus</i> | --- | Schuermans | 1931 |
| Ricardo | ---; ---; 76, 77, 139 | Stekhoven | |
| <i>namocallosus</i> | Leaves and twigs over shallow water along river- | Isaac | 1925 |
| Ricario | banks, prefer hard caked up damp soil along river bank; in bushes, July, Oct.-Nov.; 143 | | |
| | --- | Fletcher | 1916 |
| | ---; Jan., March-June, 143 | | |
| | --- | Fletcher | 1917 |
| | ---; Dec.; 143 | | |
| <i>namoralis</i> | --- | Buxton | 1924 |
| Meigen | ---; April and May; 159 | | |
| | --- | Sassuchin | 1930 |
| | ---; ---; 256 | et al. | |
| | --- | Kröber | 1925 |
| | ---; ---; 342 | | |
| <i>namoralis</i> | --- | Surcouf | 1920 |
| var. <i>ruficornis</i> | ---; ---; 302 | | |
| Surcouf | | | |
| <i>nephodes</i> | --- | Senior-White | 1927 |
| Bigot | ---; ---; 143 | | |
| <i>nervus</i> | --- | Schuermans | 1926 |
| Walker | ---; ---; 145, 149 | Stekhoven | |
| <i>nicobarensis</i> | --- | Senior-White | 1927 |
| Schiner | ---; ---; 224 | | |
| <i>nigellus</i> | --- | Kröber | 1925 |
| Stålady | ---; ---; 256 | | |
| <i>nigerrimus</i> | --- | Schuermans | 1926 |
| Schuermans | ---; ---; 145, 149 | Stekhoven | |
| Stekhoven | | | |
| <i>nigricornis</i> | --- | Kröber | 1925 |
| Zetterstedt | ---; ---; 162 | | |
| | --- | Kono & | 1939b |
| | ---; ---; 256, 353 | Takahasi | |
| | --- | Skufin | 1949 |
| | ---; ---; 256* | | |

TABLE 1 - HORSE FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|---|-------------------------|-------|
| <i>TABANUS</i> <i>nigrifacies</i> Gobert | Swampy ground, river or lake banks, edge of forest; most active between 6:00 and 7:00 p.m. June-Aug.; 256° | Fraser | 1920 |
| <i>nigrifer</i> Walker | ---; ---; 25 | Kröber | 1925 |
| <i>nigripes</i> Enderlein | ---; ---; 145 | Schuermans Stekhoven | 1932 |
| <i>nigritus</i> Fabricius | ---; ---; 302, 317, 342, 350 | Kröber | 1924a |
| <i>nigrivitta</i> Olsuf'ev | ---; June; 256° | Skufin | 1949 |
| <i>nigrocorpus</i> Kröber | ---; ---; 256 | Olsuf'ev | 1937 |
| <i>nigropictus</i> Macquart | ---; ---; 143 | Senior-White | 1927 |
| <i>nigrotectus</i> Bigot | ---; ---; 144, 277 | Austen | 1922 |
| <i>niveipalpis</i> Bigot | ---; ---; 150, 345 | Kröber | 1939 |
| <i>nocturnus</i> Schuermans Stekhoven | ---; ---; 143 | Schuermans Stekhoven | 1926 |
| <i>obconicus</i> Walker | ---; ---; 143 | Senior-White | 1927 |
| <i>obscuratus</i> Walker | ---; ---; 147 | Schuermans Stekhoven | 1932b |
| <i>obtusipalpis</i> Schuermans Stekhoven | ---; ---; 147 | Oldroyd | 1948 |
| <i>oohroöter</i> Schuermans Stekhoven | ---; ---; 149 | Schuermans Stekhoven | 1926 |
| <i>oohroceras</i> Schuermans Stekhoven | ---; ---; 143 | Schuermans Stekhoven | 1932b |
| <i>oohrogaster</i> Schuermans Stekhoven | ---; ---; 149 | Schuermans Stekhoven | 1932b |

TABLE 1 - HORSE FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|--|-------------------------|-------|
| <i>TABANUS</i> | | | |
| <i>ochros</i> Schuermans Stekhoven | ---; ---; 277 | Schuermans Stekhoven | 1926 |
| <i>ohnos</i> Surcouf | ---; ---; 144 | Surcouf | 1921 |
| <i>okinawanus</i> Shiraki | ---; pine tree forest, in houses in the evening, sometimes attracted by lights; 158°. ---; ---; 257 | Shiraki | 1918 |
| <i>oppugnator</i> Austen | ---; ---; 317 | Austen | 1925 |
| <i>optatus</i> Walker | ---; ---; 143, 145, 146, 149, 190, 218, 366, 367 | Schuermans Stekhoven | 1926 |
| <i>orientalis</i> Wiedemann | ---; ---; 76, 143 | Hsiao | 1945 |
| <i>orientis</i> Walker | ---; ---; 59 | Senior-White | 1922 |
| | ---; ---; 76, 218 | Schuermans Stekhoven | 1931 |
| | ---; at 7,000 feet elevation; 143 | Brunetti | 1917 |
| <i>oviventris</i> Schuermans Stekhoven | ---; ---; 149 | Schuermans Stekhoven | 1926 |
| <i>oxyceratus</i> Bigot | ---; ---; 59, 143, 277 | Schuermans Stekhoven | 1926 |
| | ---; ---; 235 | Senior-White | 1922 |
| <i>pallesoens</i> Walker | ---; ---; 25 | Kröber | 1925 |
| <i>pallidipestoratus</i> Bigot | ---; ---; 76 | Hwang | 1936 |
| | ---; ---; 77, 144 | Shiraki | 1918 |
| <i>pallidipes</i> Austen | ---; July-August, enters houses; 154 | Buxton | 1924 |
| | ---; ---; 153 | Austen | 1922b |
| | ---; ---; 302, 342 | Kröber | 1925 |
| <i>pallidiventer</i> Schuermans Stekhoven | ---; ---; 143 | Schuermans Stekhoven | 1926 |
| <i>pallitarsis</i> Olsuf'ev | ---; ---; 256, 353 | Kröber | 1939 |

TABLE 1 - HORSE FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---------------------------|---|------------------|-------|
| <i>TABANUS</i> | | | |
| <i>palpalis</i> | | | |
| var. <i>incertus</i> | ---; ---; 143 | Szilády | 1926 |
| Szilády | | | |
| <i>parabrunneus</i> | ---; ---; 145 | Schuermans | |
| Schuermans | | Stekhoven | 1932 |
| Stekhoven | | | |
| <i>paradoxus</i> | ---; ---; 28, 256, 345 | Kröber | 1924a |
| Jaennicke | ---; ---; 150 | Kröber | 1925 |
| <i>parafuscomaculatus</i> | ---; ---; 143 | Schuermans | |
| Schuermans | | Stekhoven | 1932b |
| Stekhoven | | | |
| <i>parahybridus</i> | ---; ---; 143 | Schuermans | |
| Schuermans | | Stekhoven | 1932b |
| Stekhoven | | | |
| <i>parallelifrons</i> | ---; ---; 145, 149 | Schuermans | |
| Schuermans | | Stekhoven | 1926 |
| Stekhoven | | | |
| <i>paralleliventer</i> | ---; ---; 149 | Schuermans | |
| Schuermans | | Stekhoven | 1926 |
| Stekhoven | | | |
| <i>paramufiventris</i> | Small muddy pond; ---; 149 | Nieschulz | 1927 |
| Nieschulz | | | |
| <i>parimixtus</i> | ---; ---; 145 | Schuermans | |
| Schuermans | | Stekhoven | 1932b |
| Stekhoven | | | |
| <i>pavlovakii</i> | ---; ---; 256 | Olsuf'ev | 1937 |
| Olsuf'ev | | | |
| <i>peculiaris</i> | ---; experimental transmission of tularemia; 162 | Olsuf'ev & Golov | |
| Szilády | ---; ---; 256 | Kröber | 1925 |
| | ---; ---; 318, 326 | Olsuf'ev | 1937 |
| <i>peculiaris</i> | | | |
| var. <i>kröberi</i> | ---; ---; 162 | Kröber | 1939 |
| Szilády | | | |
| <i>perakiensis</i> | ---; ---; 77, 149, 190 | Schuermans | |
| Ricardo | | Stekhoven | 1926 |

TABLE 1 - HORSE FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|-------------------------|-------|
| <i>TABANUS</i> <i>persis</i> Ricardo | ---; ---; 3, 150, 151, 342 (Along the creek banks and water courses) | Patton | 1920 |
| <i>petiolatus</i> Szilády | ---; ---; 76 | Hsiao | 1945 |
| <i>pfeifferi</i> Kröber | ---; ---; 317 | Kröber | 1939 |
| <i>philippinensis</i> Kröber | ---; ---; 242 | Kröber | 1924 |
| <i>pictiventris</i> Szilády | ---; ---; 145 | Szilády | 1926 |
| <i>platybasianulatus</i> Schuurmans Stekhoven | ---; ---; 146 | Schuurmans Stekhoven | 1926 |
| <i>plebejus</i> Fallen | ---; ---; 256 | Kono & Takahasi | 1939b |
| <i>plebejus</i> var. <i>aethereus</i> Bigot | ---; ---; 256 | Kröber | 1939 |
| <i>pleskei</i> Kröber | ---; ---; 194 | Hsiao | 1946 |
| | ---; ---; 256° | Gutzevich | 1947 |
| | ---; ---; 256 | Kröber | 1924a |
| <i>polaris</i> Frey | ---; ---; 256 | Anonymous | 1945a |
| | ---; ---; 294 | Olsuf'ev | 1937 |
| <i>politus</i> Walker | ---; ---; 25 | Kröber | 1925 |
| <i>polygonus</i> Walker | ---; ---; 150 | Kröber | 1925 |
| | Creek banks; common, March-Sept.; 151 | Patton | 1920 |
| <i>portschinskii</i> Olsuf'ev | ---; ---; 345 | Kröber | 1939 |
| <i>praematurus</i> Austen | ---; enters houses, bites at day-break; 277° | Austen | 1922 |
| <i>pratti</i> Ricardo | ---; ---; 145, 190 | Schuurmans Stekhoven | 1926 |
| <i>provinoialis</i> Ricardo | ---; ---; 143 | Senior-White | 1927 |

TABLE 1 - HORSE FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|-------------------------|-------|
| <i>TABANUS</i> | | | |
| <i>pseudo-</i> <i>pallidepectoratus</i> Surcouf | ---; ---; 144 | Surcouf | 1922 |
| <i>pseudorufiventris</i> Schuurmans Stekhoven | ---; ---; 149 | Schuurmans Stekhoven | 1926 |
| <i>pugiunculus</i> Austen | ---; ---; 277 | Austen | 1922 |
| <i>pugnax</i> Austen | ---; ---; 277° | Austen | 1922 |
| <i>pulchellus</i> Loew | ---; ---; 3. ---; around lamp at night, on screen in tent; 151 | Austen | 1923 |
| | ---; ---; 150, 350, 354 | Kröber | 1925 |
| | Marsh; enter huts, May-July; 151 | Patton | 1920 |
| | ---; ---; 235 | Senior-White | 1927 |
| | ---; ---; 317 | Anonymous | 1944 |
| | ---; ---; 318 | Kröber | 1939 |
| | ---; ---; 342 | Bodenheimer | 1937 |
| | ---; ---; 354 | Olsuf'ev | 1937 |
| <i>pulchriventris</i> Portschinsky | ---; ---; 210 | Hwang | 1936 |
| | ---; ---; 353 | Hsiao | 1945 |
| <i>pulverifer</i> Walker | ---; ---; 150, 302, 342 | Kröber | 1924a |
| | Marshy area, along the river; ---; 151. ---; ---; 317 | Patton | 1920 |
| | ---; April-June; 151 | Austen | 1923 |
| | ---; ---; 235 | Senior-White | 1927 |
| <i>pusillus</i> Egger | ---; ---; 76 | Hsiao | 1945 |
| | ---; ---; 350 | Kröber | 1925 |
| <i>puteus</i> Ricardo | ---; ---; 70 | Schuurmans Stekhoven | 1926 |
| <i>quadrifarius</i> Loew | ---; ---; 151, 162, 256 | Kröber | 1925 |
| <i>quatuornotatus</i> Meigen | ---; ---; 321 | Kröber | 1939 |
| | ---; June-Aug.; 345 | Olsuf'ev | 1937 |

TABLE 1 - HORSE FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|--|-------------------------|-------|
| <i>TABANUS</i> | | | |
| <i>quinquecinctus</i> Ricardo | ---; ---; 77° | Shiraki | 1918 |
| <i>rectilineatus</i> Schuurmans Stekhoven | ---; ---; 143, 218, 366, 367 | Schuurmans Stekhoven | 1926 |
| <i>rectus</i> Loew | ---; ---; 302, 342, 350 | Kröber | 1924a |
| <i>recusans</i> Walker | ---; ---; 147 | Oldroyd | 1948 |
| <i>reducens</i> Walker | ---; ---; 143 | Schuurmans Stekhoven | 1924 |
| | ---; ---; 145, 147, 242 | Schuurmans Stekhoven | 1926 |
| <i>regularis</i> Jaennicke | ---; ---; 150, 342. ---; on stems of orange trees at mid-day; 151 | Austen | 1923 |
| | ---; ---; 159, 235 | Austen | 1920 |
| | ---; ---; 302, 350 | Kröber | 1924a |
| <i>regularis</i> <i>rufus</i> Szilády | ---; ---; 150, 151, 345 | Leclerq | 1961 |
| | ---; ---; 342 | Kröber | 1925 |
| <i>reinigianus</i> Enderlein | ---; ---; 256 | Olsuf'ev | 1937 |
| <i>rohdendorfi</i> Olsuf'ev | ---; ---; 345 | Kröber | 1939 |
| <i>rousseleti</i> Macquart | ---; ---; 302, 350 | Austen | 1925 |
| <i>rubicundulus</i> Austen | ---; ---; 277 | Austen | 1922 |
| <i>rubicundus</i> Macquart | ---; ---; 59, 70, 143, 146 | Senior-White | 1922 |
| <i>rubidoides</i> Szilády | ---; ---; 143 | Szilády | 1926 |
| <i>rubidus</i> Wiedemann | ---; ---; 59, 70, 76, 139, 144, 190, 218, 277, 280. ---; all year; 149 | Schuurmans Stekhoven | 1926 |
| | Twigs and leaves overhanging water, wet soil close to water edge, on plants on the banks of stagnant pools, on foliage several feet above water; March- April, July, Oct.-Nov.; 143 | Isaac | 1925 |

TABLE 1 - HORSE FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|------------------------|--|-------------------------|-------|
| <i>TABANUS</i> | ---; open or scarcely forested regions, Dec.; 146. | Nieschulz | 1935 |
| <i>rubidus</i> | ---; open or scarcely forested regions; 149 | | |
| Wiedemann (cont.) | Running and stagnant water in forests, marshes, brackish water; ---; 146 | Nieschulz | 1926 |
| | ---; ---; 235 | Schuermans Stekhoven | 1931 |
| | ---; ---; 242, 366 | Kröber | 1924 |
| <i>rubidus</i> | | | |
| <i>priscoides</i> | ---; ---; 143, 146 | Schuermans | |
| Wiedemann | | Stekhoven | 1926 |
| <i>rubidus</i> | | | |
| <i>violaceus</i> | ---; ---; 146, 280 | Schuermans | |
| Wiedemann | | Stekhoven | 1926 |
| <i>rubriscutatus</i> | ---; ---; 145 | Schuermans | |
| Schuermans | | Stekhoven | 1926 |
| <i>rubriventris</i> | ---; ---; 147 | Oldroyd | 1948 |
| Macquart | | | |
| <i>rufidens</i> | ---; ---; 158, 256 | Kröber | 1924a |
| (Bigot) | | | |
| <i>rufinotatus</i> | ---; ---; 144 | Szilády | 1926 |
| Szilády | | | |
| <i>rufinotatus</i> | ---; ---; 76 | Haiao | 1945 |
| (Bigot) | | | |
| <i>rufiscutellatus</i> | ---; ---; 146, 149 | Schuermans | |
| Schuermans | | Stekhoven | 1926 |
| Stekhoven | | | |
| <i>rufiventris</i> | ---; ---; 59, 158 | Wu | 1940 |
| Fabricius | | | |
| | ---; ---; 76, 139, 146, 149, 190, 218. ---; on road near sea shore; 77. ---; in houses; 143 | Schuermans | |
| | | Stekhoven | 1926 |
| | ---; ---; 143, 147 | Schuermans | |
| | | Stekhoven | 1931 |
| | Forest streams; ---; 146, 149 | Nieschulz | 1926 |
| | ---; ---; 158 | Haiao | 1945 |
| <i>rufifrater</i> | ---; ---; 76 | Haiao | 1945 |
| Walker | | | |
| <i>rupinae</i> | ---; May-July; 159 | Buxton | 1924 |
| Austen | | | |
| | ---; ---; 302, 342, 350 | Kröber | 1924a |

TABLE 1 - HORSE FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|-------------------------|-------|
| <i>TABANUS</i> | | | |
| <i>rupium</i> Brauer | ---; ---; 345 | Olauf'ev | 1937 |
| <i>rusticus</i> Linnaeus | ---; ---; 158 | Kröber | 1925 |
| | ---; ---; 162 | Sassuchin et al. | 1930 |
| | ---; July & August; 256° | Skufin | 1949 |
| | ---; ---; 256, 345 | Kröber | 1939 |
| | ---; ---; 294 | Olauf'ev | 1937 |
| <i>rusticus</i> <i>parallelifrons</i> Szilády | ---; ---; 162 | Szilády | 1923 |
| | ---; ---; 256 | Kröber | 1925 |
| <i>sabuletorum</i> Loew | ---; ---; 31, 256, 345, 353 | Hsiao | 1945 |
| | ---; ---; 150 | Kröber | 1925 |
| <i>sachalinensis</i> Enderlein | ---; ---; 76 | Kröber | 1934 |
| <i>sagittipalpis</i> Szilády | ---; ---; 143 | Szilády | 1926 |
| <i>salvazai</i> Surcouf | ---; ---; 144 | Surcouf | 1921 |
| <i>sanguineus</i> Walker | ---; ---; 59, 139, 146, 147, 149, 158, 190, 256, 353 | Kröber | 1924a |
| | ---; ---; 76, 277. ---; June, July and Sept.; 77 | Shiraki | 1918 |
| | ---; Nov.-Jan.; 143 | Fletcher | 1920 |
| | ---; May; 143 | Fletcher | 1916 |
| <i>sapporoensis</i> Shiraki | ---; ---; 77 | Schuermans Stekhoven | 1932b |
| | ---; ---; 158° | Shiraki | 1918 |
| | ---; ---; 158 | Kono & Takahasi | 1939 |
| <i>sapporoensis</i> Shiraki | ---; ---; 77 | Schuermans Stekhoven | 1932b |
| | ---; ---; 158, 256 | Kono & Takahasi | 1939 |

TABLE 1 - HORSE FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|---|-------------------------|-------|
| <i>TABANUS</i> | | | |
| <i>sareptanus</i> Szilády | ---; ---; 256 | Kröber | 1925 |
| <i>sareptanus</i> <i>melas</i> Szilády | ---; ---; 256 | Kröber | 1925 |
| <i>eauteri</i> Ricardo | ---; mountains; 77° | Shiraki | 1918 |
| <i>semenovi</i> Olsuf'ev | ---; ---; 166, 326 | Kröber | 1939 |
| <i>semiargenteus</i> Olsuf'ev | ---; ---; 28, 345 | Kröber | 1939 |
| <i>semipollinosus</i> Olsuf'ev | ---; ---; 162, 256 | Olsuf'ev | 1937 |
| <i>semitratus</i> Szilády | ---; ---; 144 | Szilády | 1926 |
| <i>serus</i> Walker | ---; ---; 147 | Schuermans Stekhoven | 1932b |
| <i>servillei</i> Macquart | ---; ---; 146 | Schuermans Stekhoven | 1926 |
| <i>sexnotus</i> Ricardo | ---; ---; 59, 77, 143, 144, 277 | Schuermans Stekhoven | 1926 |
| | ---; ---; 76, 235 | Senior-White | 1922 |
| <i>shalkovnikovi</i> Paramonov | ---; ---; 28 | Kröber | 1939 |
| <i>shirakii</i> (Kunderlein) | ---; ---; 76 | Haiao | 1945 |
| <i>shnitnikovi</i> Olsuf'ev | ---; ---; 162, 256 | Olsuf'ev | 1937 |
| <i>siamensis</i> Ricardo | ---; ---; 277 | Austen | 1922 |
| <i>sieberi</i> Schuermans Stekhoven | ---; ---; 145 | Schuermans Stekhoven | 1928 |
| <i>signifer</i> Walker | ---; ---; 76 | Haiao | 1945 |
| | ---; ---; 144 | Szilády | 1926 |

TABLE 1 - HORSE FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|--|-------------------------|-------|
| <i>TABANUS</i> | | | |
| <i>significans</i> Ricardo | ---; ---; 190 | Schuermans Stekhoven | 1926 |
| <i>significans</i> <i>inaequusignatus</i> Ricardo | ---; ---; 145 | Schuermans Stekhoven | 1932b |
| <i>simplissimus</i> Walker | ---; ---; 145, 190, 280 | Schuermans Stekhoven | 1926 |
| | ---; ---; 149 | Schuermans Stekhoven | 1932b |
| <i>sinensis</i> Szilady | ---; ---; 76 | Anonymous | 1945 |
| | ---; ---; 139 | Hsiao | 1945 |
| <i>sinicus</i> Walker | ---; ---; 76, 139 | Schuermans Stekhoven | 1926 |
| <i>soembawensis</i> Schuermans Stekhoven | ---; ---; 146 | Schuermans Stekhoven | 1926 |
| <i>solstitialis</i> Schiner | ---; experimental transmission of tularemia; 162 | Olsuf'ev & Golov | 1936 |
| | ---; June, experimental transmission of tularemia; 256. ---; ---; 345 | Olsuf'ev | 1937 |
| | ---; June-July; 256* | Skufin | 1949 |
| | ---; ---; 350 | Kröber | 1925 |
| <i>speciosus</i> Ricardo | ---; ---; 70 | Senior-White | 1927 |
| | ---; Aug.; 143 | Fletcher | 1930 |
| <i>spectabilis</i> Loew | ---; ---; 150, 151, 302, 317, 342, 350 | Kröber | 1924a |
| | ---; ---; 256, 318, 321, 326, 345, 354 | Olsuf'ev | 1937 |
| <i>speculum</i> Walker | ---; ---; 145, 190 | Schuermans Stekhoven | 1926 |
| <i>spodopterus</i> Meigen | ---; ---; 23, 150, 151, 256, 345 | Kröber | 1924a |
| <i>spoliatus</i> Walker | ---; ---; 145 | Schuermans Stekhoven | 1926 |
| <i>stencpelaphus</i> Olsuf'ev | ---; ---; 256 | Olsuf'ev | 1937 |
| <i>stigmopterus</i> Olsuf'ev | ---; ---; 168, 256 | Kono & Takahasi | 1939a |

TABLE 1 - HORSE FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|-----------------------|---|-------------------------|-------|
| <i>TABANUS</i> | --- | | |
| <i>striatus</i> | ---; ---; 59, 139, 144, 180, 185, 218, 235, 280, 337, 367. ---; all year; 149. ---; in houses; 277 | Schuermans Stekhoven | 1926 |
| <i>Fabricius</i> | ---; ---; 70, 76 | Schuermans Stekhoven | 1931 |
| | ---; active at sunset, rest by day on shaded tree trunks; 143 | Isaac | 1925a |
| | ---; Feb., June, Oct.; 143 | Fletcher | 1916 |
| | ---; ---; 145, 147 | Schuermans Stekhoven | 1932 |
| | ---; Nov. and Dec.; 146 | Nieschulz | 1925 |
| | Prefers open country; ---; 146, 149 | Nieschulz | 1926 |
| | Creek, aquatic plants, drift wood, stones; active between 7:00 and 8:00 a.m., 3:30 to 6:00 p.m., Aug., Sept., Oct., and Dec.; 242 | Mitzsain | 1913 |
| | ---; attack especially children in vicinity of cattle or horses, bloodsucker; 242° | Banks | 1919 |
| | ---; ---; 349 | de Mello & Afonso | 1921 |
| <i>striatus</i> | ---; ---; 150, 151 | Krüber | 1924a |
| <i>Surcouf</i> | | | |
| <i>strix</i> | ---; ---; 151 | Krüber | 1925 |
| <i>Saillady</i> | | | |
| <i>subcallosus</i> | ---; ---; 143 | Senior-White | 1927 |
| <i>Ricardo</i> | | | |
| <i>subhirtus</i> | ---; ---; 143, 146 | Senior-White | 1927 |
| <i>Ricardo</i> | | | |
| <i>subcubiletorum</i> | ---; ---; 162, 342, 353 | Krüber | 1939 |
| <i>Olsuf'ev</i> | | | |
| <i>suocurvus</i> | ---; ---; 145 | Schuermans Stekhoven | 1926 |
| <i>Walker</i> | | | |
| | Along the river banks, marshes, stagnant pools; ---; 147 | Schuermans Stekhoven | 1924 |
| <i>sudeticus</i> | ---; ---; 150, 151, 256 | Krüber | 1924a |
| <i>Zeller</i> | ---; ---; 256° | Stufin | 1949 |

TABLE 1 - HORSE FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|----------------------|--|--------------|-------|
| <i>TABANUS</i> | --- | Senior-White | 1927 |
| <i>sufia</i> | --- | | |
| Jaennicke | ---; March-June; 151 | Austen | 1923 |
| | Creek banks and water courses; ---; 151 | Patton | 1920 |
| | ---; ---; 159 | Austen | 1924 |
| | ---; ---; 302, 342, 350 | Kröber | 1924a |
| <i>sulcifrons</i> | --- | Isaac | 1925a |
| Macquart | --- | | |
| <i>sulfureoens</i> | --- | Schuermans | |
| Schuermans | --- | Stekhoven | 1932b |
| Stekhoven | --- | | |
| <i>sven-hedini</i> | --- | Kröber | 1934 |
| Kröber | --- | | |
| <i>spiridowi</i> | --- | Kröber | 1924a |
| Portschinsky | --- | Kröber | 1928 |
| | --- | | |
| <i>syriacus</i> | --- | Kröber | 1924a |
| Kröber | --- | | |
| <i>sylvioides</i> | --- | Schuermans | |
| Walker | --- | Stekhoven | 1926 |
| <i>sziladyi</i> | --- | Szilády | 1926 |
| Szilády | --- | | |
| <i>sziladyi</i> | --- | Schuermans | |
| Schuermans | --- | Stekhoven | 1932b |
| Stekhoven | --- | | |
| <i>takasagoensis</i> | --- | Kröber | 1924 |
| Shiraki | --- | | |
| <i>taramidnoides</i> | --- | Heiao | 1946 |
| Oleuf'ev | --- | Oleuf'ev | 1937 |
| | --- | | |
| <i>taramidnoides</i> | --- | Kono & | |
| Linnaeus | --- | Takahasi | 1939 |
| | Swampy grounds, river or lake banks, edges of forests; most active between 6:00 and 7:00 p.m., June-Aug.; 256° | Fraser | 1920 |
| | --- | | |
| | ---; May-June; 256 | Oleuf'ev | 1937 |
| <i>tartaricus</i> | --- | Hwang | 1936 |
| bicolor | --- | | |
| Szilády | --- | | |

TABLE 1 - HORSE FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--------------------|--|-------------------------|-------|
| <i>TABANUS</i> | | | |
| <i>tartaricus</i> | | | |
| <i>sonatus</i> | ---; ---; 326 | Kröber | 1925 |
| Szilády | | | |
| <i>tataricus</i> | ---; ---; 31, 76, 162, 256 | Wu | 1940 |
| Portschinsky | ---; ---; 166, 326 | Szilády | 1923 |
| | ---; ---; 317 | Schuurmans Stekhoven | 1931 |
| | ---; ---; 353 | Hwang | 1936 |
| <i>tataricus</i> | | | |
| <i>aurantiacus</i> | ---; ---; 326 | Kröber | 1925 |
| Szilády | | | |
| <i>tenasserimi</i> | ---; ---; 59 | Szilády | 1926 |
| Szilády | | | |
| <i>tenebrosus</i> | ---; ---; 143 | Schuurmans Stekhoven | 1926 |
| Walker | | | |
| <i>tenens</i> | ---; ---; 70, 218, 366, 367 | Schuurmans Stekhoven | 1926 |
| Walker | | | |
| | ---; ---; 76, 122, 146, 149, 190 | Senior-White | 1927 |
| | Twigs and leaves above water along margin of small streams; walls of houses, March-April, July, Oct.-Nov.; 143 | Isaac | 1925 |
| | ---; common; 143 | Isaac | 1925a |
| | ---; ---; 242 | Wu | 1940 |
| <i>tener</i> | ---; ---; 76 | Wu | 1940 |
| Osten-Sacken | | | |
| <i>tenuicornis</i> | ---; ---; 345 | Kröber | 1939 |
| Enderlein | | | |
| <i>tergestinus</i> | ---; ---; 256* | Skufin | 1949 |
| Egger | ---; ---; 345 | Oleuf'ev | 1937 |
| <i>terminalis</i> | ---; ---; 25 | Kröber | 1924a |
| Walker | | | |
| <i>testaceus</i> | ---; ---; 25 | Kröber | 1924a |
| Forskál | | | |
| <i>tetricus</i> | ---; ---; 256, 345 | Kröber | 1925 |
| Szilády | | | |

TABLE 1 - HORSE FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|---|-------------------------|-------|
| <i>TABANUS</i> | | | |
| <i>tibetanus</i> Szilády | ---; ---; 76 | Hsiao | 1945 |
| <i>tiluënsis</i> Nieschulz | ---; ---; 146 | Nieschulz | 1927 |
| <i>tinctothorax</i> Ricardo | ---; ---; 190, 277 | Schuurmans Stekhoven | 1928 |
| <i>tinctus</i> Walker | ---; ---; 150, 345 | Leclerq | 1961 |
| <i>tinnunculus</i> Szilády | ---; ---; 151 | Szilády | 1923 |
| <i>tong-lai</i> Surcouf | ---; ---; 144 | Surcouf | 1922 |
| <i>transversus</i> Walker | ---; ---; 145 | Ricardo | 1914a |
| <i>4-triangularis</i> Schuurmans Stekhoven | ---; ---; 144 | Schuurmans Stekhoven | 1932b |
| <i>5-triangularis</i> Schuurmans Stekhoven | ---; ---; 242 | Schuurmans Stekhoven | 1932b |
| <i>trichinopolis</i> Ricardo | ---; ---; 143 | Ricardo | 1914 |
| <i>tricolor</i> Zeller | ---; ---; 28, 162, 256, 345, 350 | Kröber | 1925 |
| <i>tricolor</i> var. <i>albifascius</i> Enderlein | ---; ---; 345 | Kröber | 1939 |
| <i>tricolor</i> var. <i>pallidicaudus</i> Olsuf'ev | ---; ---; 256 | Kröber | 1939 |
| <i>tricolor</i> var. <i>ruficaudus</i> Enderlein | ---; ---; 350 | Kröber | 1939 |
| <i>tricoloratus</i> Schuurmans Stekhoven | ---; ---; 146 | Schuurmans Stekhoven | 1926 |

TABLE 1 - HCRSE FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|---|-------------------------|-------|
| <i>LABANUS</i> <i>trigonus</i> Coquillett | ---; June-Sept., active between 2:00 and 7:00 p.m.; 158° | Shiraki | 1918 |
| | ---; ---; 158 | Kono & Takahasi | 1939b |
| | ---; ---; 256 | Kröber | 1924a |
| <i>trinominata</i> Senior-White | ---; ---; 143 | Senior-White | 1927 |
| <i>tristis</i> van der Wulp | ---; ---; 149 | Schuermans Stekhoven | 1926 |
| <i>tropicus</i> Panzer | ---; ---; 77 | Kröber | 1925 |
| | ---; ---; 143, 146 | Senior-White | 1927 |
| | ---; ---; 158, 170, 194 | Kono & Takahasi | 1939 |
| | ---; May-June; 256 | Olsuf'ev | 1937 |
| | ---; ---; 256° | Skufin | 1949 |
| <i>tropicus</i> var. <i>bisignatus</i> Jaennicke | ---; June; 256 | Fraser | 1920 |
| <i>tuberculatus</i> Ricardo | ---; ---; 143 | Senior-White | 1927 |
| <i>tunicatus</i> var. <i>rufescens</i> Szilády | ---; ---; 302 | Kröber | 1939 |
| <i>turkestanus</i> Szilády | ---; ---; 76, 166 | Kröber | 1934 |
| | ---; experimental transmission of tularemia; 162 | Olsuf'ev & Golov | 1936 |
| <i>turkestanus</i> <i>ater</i> Szilády | ---; ---; 162 | Kröber | 1923 |
| <i>turkestanus</i> <i>minor</i> Szilády | ---; ---; 162 | Kröber | 1925 |
| <i>umbrinus</i> Meigen | ---; ---; 159° | Austen | 1924 |
| | ---; ---; 317 | Austen | 1925 |
| | ---; ---; 318, 326, 345, 354 | Olsuf'ev | 1937 |
| | ---; ---; 342, 350 | | |

TABLE 1 - HORSE FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|--|-------------------------|-------|
| <i>TABANUS</i> | | | |
| <i>undulans</i> Schuurmans Stekhoven | ---; ---; 149, 190 | Schuurmans Stekhoven | 1926 |
| <i>unifasciatus</i> Loew | ---; ---; 28, 256, 302, 317, 342, 345, 350, 354 | Kröber | 1924a |
| <i>unifasciatus</i> var. <i>albescens</i> Kröber | ---; ---; 317 | Kröber | 1939 |
| <i>uniformis</i> Ricardo | ---; ---; 190 | Schuurmans Stekhoven | 1926 |
| <i>univentris</i> Walker | ---; ---; 145, 146, 190, 242 | Kröber | 1924 |
| <i>ussuriensis</i> Olsuf'ev | ---; ---; 256 | Olsuf'ev | 1937 |
| <i>vagus</i> Walker | ---; ---; 139 | Hwang | 1936 |
| <i>vandersulpi</i> Osten Sacken | ---; ---; 242 | Schuurmans Stekhoven | 1932b |
| <i>ventri- flavimarginatus</i> Schuurmans Stekhoven | ---; ---; 145, 149 | Schuurmans Stekhoven | 1926 |
| <i>virgo</i> Wiedemann | On foliage hanging over streams, in damp soil on banks of streams; attracted to light, March-April, July, Oct.-Nov.; 143 | Isaac | 1925 |
| <i>virgulatus</i> Austen | ---; ---; 277 | Austen | 1922 |
| <i>vulpes</i> Szilády | ---; ---; 342 | Kröber | 1925 |
| <i>wallacei</i> Szilády | ---; ---; 143 | Szilády | 1926 |
| <i>wyvillei</i> Ricardo | ---; ---; 143 | Senior-White | 1927 |
| <i>xanti</i> Szilády | ---; ---; 145 | Szilády | 1926 |
| <i>yao</i> Macquart | ---; ---; 76, 158, 168 | Kono & Takahasi | 1939a |
| | ---; ---; 77, 143 | Szilády | 1926 |

TABLE 1 - HORSE FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|-------------------------|-------|
| <i>TABANUS</i> | | | |
| <i>zebrinus</i> Schuurmans Stekhoven | ---; ---; 145 | Schuurmans Stekhoven | 1932b |
| <i>zini</i> Olsuf'ev | ---; ---; 150 | Kröber | 1939 |
| <i>znokoi</i> Olsuf'ev | ---; ---; 35, 345 | Kröber | 1939 |
| <i>THERIOPLECTES</i> | | | |
| <i>acuminatus</i> Loew | ---; ---; 256 | Kröber | 1923 |
| <i>astur</i> Erichson | ---; ---; 162, 256 | Kröber | 1923 |
| <i>aterrimus</i> Meigen | ---; ---; 345 | Kröber | 1923 |
| <i>borealis</i> Loew | ---; ---; 256 | Kröber | 1923 |
| <i>brevis</i> Loew | ---; ---; 256 | Kröber | 1923 |
| <i>caucasi</i> Szilády | ---; ---; 345 | Kröber | 1925 |
| <i>confinis</i> Zetterstedt | ---; ---; 256 | Kröber | 1923 |
| <i>decorus</i> Loew | ---; ---; 154, 159, 174, 302, 342 | Kröber | 1923 |
| <i>decorus</i> var. <i>cyanops</i> Brauer | ---; ---; 302 | Kröber | 1923 |
| <i>distinguendus</i> Verrall | ---; ---; 158, 256 | Shiraki | 1918 |
| <i>erberi</i> Brauer | ---; ---; 256 | Kröber | 1923 |
| <i>flavipes</i> Wiedemann | ---; ---; 256 | Kröber | 1923 |
| <i>hirtioeps</i> Loew | ---; ---; 158, 256 | Kröber | 1923 |
| <i>hirtus</i> Walker | ---; ---; 143 | Brunetti | 1917 |

TABLE 1 - HORSE FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|----------|-------|
| <i>THERIOPECTES</i> | | | |
| <i>lapponicus</i> Wahlberg | ---; ---; 256 | Kröber | 1923 |
| <i>lapponicus</i> var. <i>albonotatus</i> Zetterstedt | ---; ---; 256 | Kröber | 1923 |
| <i>lateralis</i> Meigen | ---; ---; 256 | Kröber | 1923 |
| <i>luridus</i> Fallen | ---; ---; 256 | Kröber | 1923 |
| <i>mendicus</i> Villeneuve | ---; ---; 302 | Kröber | 1922a |
| | ---; ---; 342 | Kröber | 1923 |
| <i>montanus</i> Meigen | ---; ---; 158, 256 | Kröber | 1923 |
| <i>montanus</i> var. <i>immaculiventris</i> Kröber | ---; ---; 162, 166 | Kröber | 1923 |
| | ---; ---; 256 | Kröber | 1922a |
| <i>mühlfeldi</i> Brauer | ---; ---; 162, 256, 350 | Kröber | 1923 |
| <i>nigellus</i> Szilády | ---; ---; 256 | Kröber | 1923 |
| <i>nigricornis</i> Zetterstedt | ---; ---; 256 | Kröber | 1923 |
| <i>nigricorpus</i> Kröber | ---; ---; 162, 166 | Kröber | 1923 |
| <i>nitidifrons</i> Szilády | ---; ---; 256 | Kröber | 1923 |
| <i>pulohriventris</i> Portschinsky | ---; ---; 210 | Kröber | 1923 |
| <i>sareptanus</i> Szilády | ---; ---; 256 | Kröber | 1923 |
| <i>sareptanus</i> var. <i>melas</i> Szilády | ---; ---; 256 | Kröber | 1923 |
| <i>solstitialis</i> Schiner | ---; ---; 256, 350 | Kröber | 1923 |
| <i>suballosus</i> Ricardo | ---; ---; 143 | Brunetti | 1917 |

TABLE 1 - HORSE FLIES (concluded)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|---|--------------|------|
| <i>THERIOPECTES</i> | | | |
| <i>tarandinus</i> Linnaeus | ---; Aug.; 77. ---; ---; 158, 256 | Shiraki | 1918 |
| <i>tataricus</i> Portschinsky | ---; ---; 162, 166, 256 | Kröber | 1923 |
| <i>tetricus</i> Szilády | ---; ---; 166, 256, 345 | Kröber | 1925 |
| <i>tricolor</i> <i>albifascia</i> Enderlein | ---; ---; 345 | Kröber | 1925 |
| <i>tricolor</i> <i>ruficauda</i> Enderlein | ---; ---; 350 | Kröber | 1925 |
| <i>tropicus</i> Panzer | ---; ---; 77, 158, 256 | Kröber | 1923 |
| <i>tropicus</i> var. <i>bisignatus</i> Jaennicke | ---; ---; 256 | Kröber | 1923 |
| <i>TYLOSTYPIA</i> | | | |
| <i>reinigiana</i> Enderlein | ---; ---; 303 | Enderlein | 1934 |
| <i>TYLOSTYPINA</i> | | | |
| <i>nigrocinota</i> Enderlein | ---; ---; 162 | Kröber | 1925 |
| <i>UDENOCERA</i> | | | |
| <i>brunnea</i> Ricardo | ---; ---; 70 | Senior-White | 1927 |

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F. BITING FLIES

Biting flies belong to several families. *Glossina tachinoides* Westwood was recorded in Aden and the Arabian Peninsula.

The table includes 9 species or subspecies.

TABLE 1 - BITING FLIES

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---------------------|---|--------------------|------|
| <i>GLOSSINA</i> | ---; ---; 2 | Lewis | 1949 |
| <i>tachinoides</i> | | | |
| Westwood | ---; ---; 25 | Gill | 1916 |
| <i>HAEMATOBIA</i> | | | |
| <i>sanguisugens</i> | Dung in a crack or crevice; Apr.-Nov.; 143° | Mitter | 1916 |
| Austen | | | |
| <i>HAEMATOBOSCA</i> | | | |
| <i>perturbans</i> | ---; occasionally bites man; 76°, 168° | Barnett & Toshioka | 1951 |
| Bezzi | | | |
| <i>LYPEROSIA</i> | | | |
| <i>exigua</i> | ---; seldom bites man; 146° | Handschin | 1933 |
| de Meijere | | | |
| <i>minuta</i> | ---; troublesome in early morning and at sunset; 154° | Austen | 1921 |
| Bezzi | | | |
| <i>SIPHONA</i> | ---; occasionally bites man; 168° | Barnett & Toshioka | 1951 |
| <i>irritans</i> | | | |
| (Linnaeus) | ---; ---; 317° | Anonymous | 1944 |
| <i>STOMOXYS</i> | ---; rarely bites; 76° | Meng | 1943 |
| <i>oalotrans</i> | ---; Apr.-Nov.; 143° | Mitter | 1916 |
| Linnaeus | ---; ---; 151° | Acton | 1919 |
| | ---; enters houses; 154 | Austen | 1921 |
| | ---; May; 159° | Buxton | 1924 |
| | Mixture of straw and manure, decaying seaweed; vicious biter, biting during the day; 168° | Barnett & Toshioka | 1951 |
| | ---; experimental transmission of cutaneous leishmaniasis; 174 | Berberian | 1938 |
| | ---; Nov.-Dec.; 233° | Gill | 1916 |
| | Animal manure; resting in interwoven cross-wire fence, attack man especially after rain shower, numerous between 5 a.m. and 6:40 a.m., all year; 242° | Mitzmain | 1913 |
| | ---; June, Aug.; 256 | Fraser | 1920 |

TABLE 1 - BITING FLIES (concluded)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|-------------------|---|-----------|------|
| <i>STOMOXYS</i> | ---; ---; 303° | Saïrnov | 1940 |
| <i>calcitrans</i> | | | |
| Linnaeus | Cow dung; ---; 317° | Anonymous | 1944 |
| <i>nigra</i> | Decomposing animal and vegetable matter; | Banks | 1919 |
| Macquart | bloodsucker; 242° | | |

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G. NON-BITING FLIES

The entries for non-biting flies include representatives of several groups. Of course, the most important species in this category are those that feed as larvae on the tissues of living animals.

The tables include 36 species or subspecies.

TABLE 1 - NON-BITING FLIES

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|-----------------------|---|------------------|-------|
| <i>APHIOCHAETA</i> | ---; ---; 143* | Patton | 1921 |
| <i>rufipes</i> | | | |
| Meigen | ---; ---; 143° | Patton | 1920 |
| <i>scalaris</i> | ---; lays eggs in cuts and sores; 76*, 190* | Patton | 1926 |
| Meigen | ---; ---; 143* | Strickland & Roy | 1941 |
| <i>xanthina</i> | ---; ---; 143* | Patton | 1922 |
| Speiser | ---; ---; 143° | Patton | 1920 |
| <i>CALLIPHORA</i> | | | |
| <i>erythrocephala</i> | ---; ---; 302* | Anonymous | 1944a |
| (Macquart) | | | |
| <i>CEPHALOMYIA</i> | | | |
| <i>ovis</i> | ---; ---; 303* | Pavlovskii | 1929 |
| Linnaeus | | | |
| <i>CHRY SOMYIA</i> | | | |
| <i>bessiana</i> | ---; ---; 59*, 70*, 143* | Patton | 1921 |
| Villeneuve | ---; ---; 59*, 366* | Strickland & Roy | 1941 |
| | ---; ---; 76* | Patton | 1926 |
| | ---; ---; 143° | Patton | 1920 |
| | ---; ---; 144* | Motais & Borel | 1928 |
| | ---; ---; 144* | Massias | 1930 |
| | ---; ---; 242*, 277* | Geigy & Herbig | 1955 |
| <i>dur</i> | ---; ---; 144* | Massias | 1930 |
| Eschscholtz | ---; ---; 235* | Sinton | 1921 |
| <i>flavioeps</i> | ---; ---; 143* | Fletcher | 1917 |
| Meigen | | | |
| <i>megacephala</i> | ---; ---; 144* | Massias | 1930 |
| (Fabricius) | | | |
| <i>ERISTALIS</i> | | | |
| <i>tenax</i> | ---; ---; 76* | Meng | 1943 |
| Linnaeus | | | |

TABLE 1 - NON-BITING FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--------------------------------------|--|---------------------|-------|
| <i>GASTEROPHILUS</i> | | | |
| <i>haemorrhoidalis</i> (Linnaeus) | ---; ---; 302* | Anonymous | 1944a |
| <i>pecorum</i> Fabricius | ---; ---; 318* | Paramonov | 1940 |
| <i>HYPODERMA</i> | | | |
| <i>bovis</i> Linnaeus | ---; ---; 321* | Pavlovskii & Glezer | 1932 |
| <i>diana</i> Brauer | ---; ---; 256* | Anonymous | 1944 |
| <i>lineatum</i> de Villers | ---; ---; 143*° | Geigy & Herbig | 1955 |
| | ---; ---; 321* | Pavlovskii & Glezer | 1932 |
| | ---; ---; 345* | Seguy | 1928 |
| <i>LUCILIA</i> | | | |
| <i>sericata</i> (Meigen) | ---; ---; 76* | Patton | 1926 |
| | ---; ---; 143*, 235* | Sinton | 1921 |
| | ---; ---; 321* | Paramonov | 1937 |
| | ---; myiasis in wound causing gangrene; 342* | Buxton | 1924 |
| <i>MUSCA</i> | | | |
| <i>domestica</i> Linnaeus | ---; ---; 321* | Yatzenko et al | 1934 |
| <i>sorbens</i> Wiedemann | ---; enters houses; 76°, 150°, 256°, 270°, 302°, 342°. ---; enters houses, mechanical transmitter of eye disease organisms; 151° | Patton | 1933 |
| | ---; ---; 302** | Anonymous | 1944a |
| <i>tempestiva</i> Fallen | ---; common; 76°. ---; ---; 143°, 150°, 151°, 253°, 270°, 302°, 342° | Patton | 1933 |
| <i>vitripennis</i> Meigen | ---; ---; 143°, 150°, 151°, 253°, 270°, 302°, 342° | Patton | 1933 |
| <i>MUSCIA</i> | | | |
| <i>stabularis</i> (Fallen) | ---; ---; 168* | Kobayashi | 1925 |
| | ---; ---; 302* | Anonymous | 1944a |

TABLE 1 - NON-BITING FLIES (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|--|--|--------------------------------------|
| <i>OESTRUS</i> <i>ovis</i> Linnaeus | ---; ---; 342* | Buxton | 1924 |
| <i>PHAENICIA</i> <i>sericata</i> (Meigen) | ---; ---; 76* | Hsiao | 1945 |
| <i>PHILAEMATOMYIA</i> <i>crassirostris</i> Stein | ---; ---; 143* ---; ---; 342° | Patton Austen | 1922a 1921 |
| <i>RAVINIA</i> <i>trivialis</i> (van der Wulp) | ---; ---; 143* | Seguy | 1928 |
| <i>RHINOESTRUS</i> <i>purpureus</i> Brauer | ---; ---; 76°. ---; Aug. and Sept.; 350*° ---; ---; 162* ---; ---; 256* ---; ---; 303* ---; ---; 342*° | Seguy Portchinsky Patton Pavlovskii Patton | 1928 1915 1922 1929 1921 |
| <i>SARCOPHAGA</i> <i>oarnarta</i> Linnaeus | ---; ---; 143* | Sinton | 1921 |
| <i>dux</i> Thomson | ---; ---; 143** | Strickland & Roy | 1941 |
| <i>haemorrhoidalis</i> (Fallen) | ---; ---; 31* | Seguy | 1928 |
| <i>hirtipes</i> Wiedemann | ---; ---; 76* | Seguy | 1928 |
| <i>latifrons</i> (Fallen) | ---; ---; 76*, 321* | Seguy | 1928 |
| <i>peregrina</i> Robineau-Desvoidy | ---; ---; 76, 77, 148 (Found in digestive tube of man) | Seguy | 1928 |
| <i>ruficornis</i> Fabricius | ---; ---; 366** | Strickland & Roy | 1941 |

TABLE 1 - NON-BITING FLIES (concluded)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|-------------------|-------|
| <i>SIPHUNCULINA</i> <i>funicola</i> de Meijere | ---; attacks man about eyes and on wounds; 143° | Fletcher et al | 1919 |
| <i>SYNTHESIOMYIA</i> <i>nudiseta</i> van der Wulp | ---; ---; 143* | Siddons & Roy | 1942 |
| <i>WOHLFAHRTIA</i> <i>magnifica</i> Schiner | ---; ---; 256°, 350° | Patton | 1921 |
| | ---; ---; 256* | Sinton | 1921 |
| | ---; ---; 302* | Anonymous | 1944a |

TABLE 2 - SUMMARY OF DISEASES OR DISEASE ORGANISMS TRANSMITTED BY NON-BITING FLIES

| SPECIES | DISEASE OR DISEASE ORGANISM | | | | | COUNTRY |
|--|-----------------------------|----------|-----------|--|--------------------------------|---------|
| | VIRUS & RICKETTSIA | PROTOZOA | HELMINTHS | OTHER | | |
| | | | | | | |
| <i>APHIOCHAETA</i> <i>rufipes</i> Meigen | | | | Tissue & intestinal myiasis | 143 | |
| <i>soalaris</i> Meigen | | | | Myiasis | 76, 190 | |
| | | | | Intestinal myiasis | 143 | |
| <i>xathina</i> Speiser | | | | Myiasis | 143 | |
| <i>CALLIPHORA</i> <i>erythrocephala</i> (Macquart) | | | | Myiasis | 302 | |
| <i>CEPHALOMYIA</i> <i>ovis</i> Linnaeus | | | | Ocular myiasis | 303 | |
| <i>CHRYSONYIA</i> <i>bezziana</i> Villeneuve | | | | Rhinal, oral, ocular, vaginal & cutaneous myiasis | 59, 70, 143 | |
| | | | | Inside dura mater of cord myiasis | 59 (Strickland & Roy, 1941) | |
| | | | | Nasal myiasis | 366 | |
| | | | | Myiasis | 76 | |
| | | | | Ocular myiasis | 144 | |
| | | | | Genital myiasis | 144 (Massias, 1930) | |
| | | | | Myiasis | 242, 277 | |
| <i>dux</i> Eschscholtz | | | | Nasal myiasis | 144, 235 | |
| <i>flavioeps</i> Meigen | | | | Nasal & tumorous myiasis | 143 | |
| <i>megacephala</i> (Fabricius) | | | | Myiasis | 144 | |

TABLE 2 - SUMMARY OF DISEASES OR DISEASE ORGANISMS TRANSMITTED BY NON-BITING FLIES (continued)

| SPECIES | DISEASE OR DISEASE ORGANISM | | | | COUNTRY |
|--|-----------------------------|----------------------|-----------|----------------------------------|----------|
| | VIRUS & RICKETTSIA | PROTOZOA | HELMINTHS | OTHER | |
| <i>ERISTALIS</i> <i>tenax</i> Linnaeus | | | | Gastro- intestinal myiasis | 76 |
| <i>GASTEROPHILUS</i> <i>haemorrhoidalis</i> (Linnaeus) | | | | Subcuti- cular myiasis | 302 |
| <i>pecorum</i> Fabricius | | | | Myiasis | 318 |
| <i>HYPODERMA</i> <i>bovis</i> Linnaeus | | | | Ocular myiasis | 321 |
| <i>diana</i> Brauer | | | | Myiasis | 256 |
| <i>lineatum</i> de Villers | | | | Myiasis | 143 |
| | | | | Ocular myiasis | 321 |
| | | | | Myiasis | 345 |
| <i>LUCILIA</i> <i>sericata</i> (Meigen) | | | | Myiasis | 76 |
| | | | | Cutaneous myiasis | 143, 235 |
| | | | | Myiasis | 321 |
| | | | | Myiasis | 342 |
| <i>MUSCA</i> <i>domestica</i> Linnaeus | | | | Urethral myiasis | 321 |
| <i>sorbens</i> Wiedemann | | Amoebic dysentery | | Bacillary dysentery | 302 |
| <i>MUSCINA</i> <i>stabulans</i> (Fallen) | | | | Intestinal myiasis | 168 |
| | | | | Intestinal myiasis | 302 |

TABLE 2 - SUMMARY OF DISEASES OR DISEASE ORGANISMS TRANSMITTED BY NON-BITING FLIES (continued)

| SPECIES | DISEASE OR DISEASE ORGANISMS | | | | COUNTRY |
|--|------------------------------|----------|-----------|--|---------|
| | VIRUS & RICKETTSIA | PROTOZOA | HELMINTHS | OTHER | |
| <i>OESTRUS</i> <i>ovis</i> Linnaeus | | | | Ocular myiasis | 342 |
| <i>PHAENICIA</i> <i>sericata</i> (Meigen) | | | | Myiasis | 76 |
| <i>PHILAEMATOMYIA</i> <i>crassirostris</i> Stein | | | | Intestinal myiasis | 143 |
| <i>RAVINIA</i> <i>trivialis</i> (van der Wulp) | | | | Myiasis | 143 |
| <i>RHINCESTRUS</i> <i>purpureus</i> Brauer | | | | Ocular myiasis | 162 |
| | | | | Ocular myiasis | 256 |
| | | | | Ocular myiasis | 303 |
| | | | | Ocular myiasis | 342 |
| | | | | Myiasis | 350 |
| <i>SARCOPHAGA</i> <i>camarta</i> Linnaeus | | | | Nasal myiasis | 143 |
| <i>dux</i> Thomson | | | | Cutaneous and intestinal myiasis | 143 |
| <i>haemorrhoidalis</i> (Fallen) | | | | Intestinal and body cavity myiasis | 31 |
| <i>hirtipes</i> Wiedemann | | | | Intestinal myiasis | 76 |
| <i>latifrons</i> (Fallen) | | | | Body cavity myiasis | 76, 321 |
| <i>ruficornis</i> Fabricius | | | | Cutaneous and intestinal myiasis | 366 |

TABLE 2 - SUMMARY OF DISEASES OR DISEASE ORGANISMS TRANSMITTED BY NON-BITING FLIES (concluded)

| SPECIES | DISEASE OR DISEASE ORGANISMS | | | | | COUNTRY |
|---|------------------------------|----------|-----------|---------|-----|---------|
| | VIRUS & RICKETTSIA | PROTOZOA | HELMINTHS | OTHER | | |
| | | | | | | |
| <i>SYNTHESIOMYIA nudiseta</i> van der Wulp | | | | Myiasis | 143 | |
| <i>WOHLFAHRTIA magnifica</i> Schiner | | | | Myiasis | 256 | |
| | | | | Myiasis | 302 | |

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H. FLEAS

The entries for fleas include almost no biology. Very few authors deal with flea biology. A few comment on fleas as vectors, but most of the literature deals with taxonomy and hosts. Only when the flea species is said to bite man is a host recorded.

The tables include 717 species or subspecies.

TABLE 1 - FLEAS

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|-----------------------------|----------------------|
| <i>ACERATOPHYLLUS</i> | | | |
| <i>euteles</i> (Jordan & Rothschild) | ---; ---; 76 | Wu | 1940 |
| <i>javanicus</i> (Ewing) | ---; ---; 146 | Kopstein | 1931 |
| <i>phillipsi</i> (Jordan) | ---; ---; 70 | Thompson | 1937 |
| <i>episema</i> Rothschild | ---; ---; 143 | da Costa Lima & Hathaway | 1946 |
| <i>AMPHALIUS</i> | | | |
| <i>clarus</i> (Jordan & Rothschild) | ---; ---; 76 | Hsiao | 1945 |
| <i>runatus</i> (Jordan & Rothschild) | ---; ---; 194, 256, 353 ---; ---; 209 ---; ---; 210, 259 | Hsiao Hsiao Wu | 1945 1946 1940 |
| <i>AMPHIPSYLLA</i> | | | |
| <i>anceps</i> Wagner | ---; ---; 303 | Wagner | 1930 |
| <i>anceps</i> <i>coangusta</i> Ioff & Tiflow | ---; ---; 256 | da Costa Lima & Hathaway | 1946 |
| <i>asiatica</i> Ioff | ---; ---; 76 ---; ---; 162 | Wu Ioff | 1940 1928 |
| <i>aspalavis</i> Jordan | ---; ---; 194, 256 | da Costa Lima & Hathaway | 1946 |
| <i>casis</i> Jordan & Rothschild | ---; ---; 76, 143 | da Costa Lima & Hathaway | 1946 |
| <i>contigua</i> Jordan & Rothschild | ---; ---; 162 | Ioff | 1925 |
| <i>contigua</i> <i>locuples</i> Jordan & Rothschild | ---; ---; 162 | Jordan & Rothschild | 1915 |

TABLE 1 - FLEAS (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|---|-----------------------------|--------|
| <i>AMPHIPSYLLEA</i> | | | |
| <i>daea</i> (Dampf) | ---; ---; 162 | da Costa Lima & Hathaway | 1946 |
| | ---; ---; 256 | Wu | 1940 |
| | ---; ---; 345 | Argyropulo | 1937 + |
| <i>dumalis</i> Jordan & Rothschild | ---; ---; 162 | Jordan & Rothschild | 1915 |
| <i>dumalis</i> <i>dumalis</i> Jordan & Rothschild | ---; ---; 162 | da Costa Lima & Hathaway | 1946 |
| <i>kalabukhovi</i> Ioff & Tiflow | ---; ---; 31 | da Costa Lima & Hathaway | 1946 |
| <i>kuznetzovi</i> Wagner | ---; ---; 162, 256 | Argyropulo | 1937 + |
| | ---; ---; 345 | Wagner | 1938 |
| <i>kuznetzovi</i> <i>deminuta</i> Ioff & Tiflow | ---; ---; 31 | da Costa Lima & Hathaway | 1946 |
| <i>kuznetzovi</i> <i>glacialis</i> Argyropulo | ---; ---; 35 | Argyropulo | 1937 + |
| | ---; ---; 345 | da Costa Lima & Hathaway | 1946 |
| <i>mitis</i> Jordan | ---; ---; 209 | Liu | 1936 |
| | ---; ---; 210 | Wu | 1940 |
| | ---; ---; 256, 353 | Hsiao | 1945 |
| <i>petrishevae</i> Darskaya | ---; ---; 158, 168 | Jameson | 1953 |
| <i>prima</i> Wagner | ---; ---; 162 | Tiflow & Usov | 1939 + |
| | ---; ---; 256* | Pavlovskii | 1931 |
| | ---; ---; 256 | da Costa Lima & Hathaway | 1946 |
| <i>primaris</i> Jordan & Rothschild | ---; ---; 162 | Jordan & Rothschild | 1915 |

TABLE 1 - FLEAS (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|-----------------------------|-------|
| <i>AMPHIPSYLLA</i> <i>primaris</i> <i>botis</i> Jordan | ---; ---; 256 | Jordan | 1929 |
| <i>primaris</i> <i>mitis</i> Jordan | ---; ---; 256, 353 | da Costa Lima & Hathaway | 1946 |
| <i>primaris</i> <i>primaris</i> Jordan & Rothschild | ---; ---; 162 | da Costa Lima & Hathaway | 1946 |
| <i>rossica</i> Wagner | ---; ---; 28 | Ioff & Argyropulo | 1934 |
| | ---; ---; 162°, 256°, 321° | Ioff | 1928a |
| | ---; ---; 256, 345 | Wagner | 1938 |
| | ---; ---; 294 | Pavlovskii | 1927 |
| <i>rossica</i> <i>locuples</i> (Jordan & Rothschild) | ---; ---; 162 | da Costa Lima & Hathaway | 1946 |
| <i>rossica</i> <i>rossica</i> Wagner | ---; ---; 256, 345 | da Costa Lima & Hathaway | 1946 |
| <i>schelkownikovi</i> Wagner | ---; in houses; 28. ---; ---; 162 | Wagner & Argyropulo | 1934 |
| | ---; naturally infected with <i>Hymenolepis</i> sp.; 35 | Popov & Akhundov | 1934 |
| | ---; ---; 256 | Sassuchin & Tiflow | 1936 |
| | ---; ---; 345 | da Costa Lima & Hathaway | 1946 |
| <i>transbaikaliae</i> Wagner | ---; ---; 256 | Wagner | 1930 |
| <i>tuta</i> Wagner | ---; ---; 76 | Haiao | 1945 |
| <i>vinogradovi</i> Ioff | ---; ---; 194, 256 | Wu | 1940 |

TABLE 1 - FLEAS (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|---|-----------------------------|-------|
| <i>ARAEOPSYLLA gestroi</i> (Rothschild) | ---; ---; 70 | da Costa Lima & Hathaway | 1946 |
| <i>mera</i> Jordan & Rothschild | ---; ---; 146 | da Costa Lima & Hathaway | 1946 |
| <i>micula</i> Jordan & Rothschild | ---; ---; 59 | da Costa Lima & Hathaway | 1946 |
| <i>putilla</i> Jordan & Rothschild | ---; ---; 143 | da Costa Lima & Hathaway | 1946 |
| <i>signata</i> (Wahlgren) | ---; ---; 146 | da Costa Lima & Hathaway | 1946 |
| <i>ARCHAEOPSYLLA erinacei</i> (Bouché) | ---; ---; 28 | Ioff & Argyropulo | 1934 |
| | ---; ---; 35 | Wagner & Argyropulo | 1934 |
| | ---; ---; 150 | Wagner | 1916 |
| | ---; ---; 256, 345 | Ioff | 1928a |
| | ---; ---; 294 | Pavlovskii | 1927 |
| | ---; ---; 342 | Buxton | 1924 |
| <i>sinensis</i> Jordan & Rothschild | ---; ---; 76, 256 | da Costa Lima & Hathaway | 1946 |
| <i>ARCTOPSYLLA hyaenae</i> (Kolenati) | ---; ---; 150, 345 | da Costa Lima & Hathaway | 1946 |
| <i>BRACHYCTENONOTUS myospalacis</i> Wagner | ---; ---; 162, 256 | Wu | 1940 |
| <i>CALLOPSYLLA raspius</i> (Ioff & Argyropulo) | ---; ---; 28, 162 | da Costa Lima & Hathaway | 1946 |

TABLE 1 - FLEAS (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|---|--------------------------|-------|
| <i>CALLOPSYLLA</i> | | | |
| <i>dolabris</i> (Jordan & Rothschild) | ---; ---; 76 | da Costa Lima & Hathaway | 1946 |
| <i>kozlovi</i> (Wagner) | ---; ---; 76 | da Costa Lima & Hathaway | 1946 |
| <i>lagomys</i> (Wagner) | ---; ---; 354 | da Costa Lima & Hathaway | 1946 |
| <i>saxatilis</i> (Ioff & Argyropulo) | ---; ---; 28 | da Costa Lima & Hathaway | 1946 |
| <i>semenovi</i> Ioff | ---; ---; 256 | Wagner | 1938 |
| <i>tiflovi</i> Wagner | ---; ---; 354 | da Costa Lima & Hathaway | 1946 |
| <i>CATALLAGIA</i> | | | |
| <i>dacenkoi</i> Ioff | ---; ---; 256 | Ioff | 1940 |
| <i>CERATOPHYLLUS</i> | | | |
| <i>advenarius</i> Wagner | ---; ---; 256 | Wagner | 1930 |
| <i>agathus</i> Jordan & Rothschild | ---; ---; 149 | Jordan & Rothschild | 1922c |
| <i>alladinis</i> Rothschild | ---; ---; 143 | Jordan & Rothschild | 1921c |
| <i>andersoni</i> Rothschild | ---; ---; 158 | Jameson | 1953 |
| <i>anisus</i> Rothschild | ---; all year, seems abundant in the spring and fall, possible vector of plague and murine typhus; 76 | Ke et al. | 1948 |
| | ---; carrier of typhus infection from rat to man, Feb.-Sept.; 76, 194° | Liu | 1944 |
| | ---; naturally infected with typhus rickettsiae; 76° | Liu | 1947 |
| | ---; ---; 158, 194 | Wu | 1940 |
| | ---; ---; 194** | Hsiao | 1946 |
| | ---; ---; 256 | Anonymous | 1944a |

TABLE 1 - FLEAS (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|--|--|---|
| <i>CERATOPHYLLUS</i> | | | |
| <i>arcotus</i> Jordan & Rothschild | ---; ---; 143 | Jordan & Rothschild | 1921c |
| <i>argutus</i> Jordan & Rothschild | ---; ---; 143 | Jordan & Rothschild | 1921c |
| <i>baikaiensis</i> Ioff | ---; ---; 256 | Ioff | 1928 |
| <i>borealis</i> Rothschild | ---; ---; 256 | Wagner | 1938 |
| <i>borneensis</i> Jordan & Rothschild | ---; ---; 145 | Kopstein | 1931 |
| <i>calcalifer</i> Wagner | ---; ---; 256 | Ioff | 1928 |
| <i>calceatus</i> Rothschild | ---; ---; 146, 149 | da Costa Lima & Hathaway | 1946 |
| <i>caliotes</i> Jordan | ---; ---; 235 | da Costa Lima & Hathaway | 1946 |
| <i>caspius</i> Tiflow | ---; ---; 28, 76, 162 | Ioff & Argyropulo | 1934 |
| <i>clarus</i> Jordan & Rothschild | ---; ---; 76 | Jordan & Rothschild | 1922 |
| <i>columbae</i> (Walckenaer & Gervais) | ---; ---; 256 ---; ---; 345 | Wagner Wagner | 1927 1916 |
| <i>consimilis</i> Wagner | ---; ---; 28 ---; ---; 162 ---; experimental transmission of plague; 256° ---; ---; 321 ---; naturally infected with plague; 345 | Ioff & Argyropulo Tiflow & Ussov Golov & Ioff Jordan & Rothschild Tiflow | 1934 1939 + 1928 1921c 1946 |
| <i>corneensis</i> Jordan & Rothschild | ---; Sept., at high altitudes; 145 | Jordan & Rothschild | 1926 |

TABLE 1 - FLEAS (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|-----------------------|---|---------------------|--------|
| <i>CERATOPHYLLUS</i> | | | |
| <i>crispus</i> | ---; ---; 76 | Chow & Huang | 1950 |
| Jordan & Rothschild | | | |
| <i>curvigenus</i> | ---; ---; 168 | Hsiao | 1948 |
| Miyajima & Koidzumi | | | |
| <i>dacus</i> | ---; ---; 345, 354 | Wagner & Ioff | 1926 |
| Jordan & Rothschild | | | |
| <i>dolabris</i> | ---; ---; 76 | Hsiao | 1945 |
| (Jordan & Rothschild) | | | |
| <i>elatus</i> | ---; ---; 162 | Jordan & Rothschild | 1915 |
| Jordan & Rothschild | | | |
| | ---; ---; 256 | Wagner & Ioff | 1926 |
| <i>euteles</i> | ---; March, at 10,000 feet elevation; 76 | Jordan | 1932 |
| Jordan & Rothschild | | | |
| <i>farreni</i> | ---; ---; 158 | Jameson | 1953 |
| Rothschild | | | |
| | ---; ---; 256 | Wagner | 1927 |
| <i>fasciatus</i> | ---; ---; 28 | Ioff & Argyropulo | 1934 |
| Bosc d'Antic | | | |
| | ---; ---; 35 | Popov & Akhundov | 1934 |
| | ---; March-June; 76 | Raynal | 1940 |
| | ---; ---; 77° | Omori | 1935 |
| | ---; ---; 118 | Stepanov | 1931 |
| | ---; possible vector of plague, Sept.-Oct.; 143 | Walker et al. | 1931 |
| | ---; ---; 158, 256 | Jordan & Rothschild | 1921c |
| | ---; ---; 162 | Tiflow & Usov | 1939 + |
| | ---; enters houses; 256 | Ioff | 1928a |
| | ---; ---; 294 | Pavlovskii | 1927 |

TABLE 1 -FLEAS (continued)

| SPECIES | BREEDING HABITATS: ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|-------------------------|---|-----------------------------|--------|
| <i>CERATOPHYLLUS</i> | | | |
| <i>fasciatus</i> | ---; ---; 321 | Roshkovskaya | 1937 |
| Bosc d'Antic (cont.) | ---; Oct.; 342 | Buxton | 1924 |
| <i>fidus</i> | ---; ---; 162 | Jordan & Rothschild | 1915 |
| Jordan & Rothschild | ---; ---; 256 | Sassuchin et al. | 1935 |
| <i>fimbriatus</i> | ---; ---; 143 | Jordan & Rothschild | 1921b |
| Jordan & Rothschild | | | |
| <i>fringillae</i> | ---; ---; 256 | Wagner | 1927 |
| Walker | | | |
| <i>gallinae</i> | ---; ---; 31, 353 | Wu | 1940 |
| (Schrack) | ---; enters houses; 35 | Argiropulo | 1937 + |
| | ---; ---; 76 | Hsiao | 1945 |
| | ---; ---; 256 | Wagner | 1927 |
| | ---; ---; 294 | Pavlovskii | 1927 |
| <i>gallinae</i> | ---; ---; 353 | da Costa Lima & Hathaway | 1946 |
| <i>gallinae</i> | | | |
| (Schrack) | | | |
| <i>gallinae</i> | ---; ---; 321 | da Costa Lima & Hathaway | 1946 |
| <i>kievensis</i> | | | |
| Wagner | | | |
| <i>garei</i> | ---; ---; 256 | Wagner | 1938 |
| Rothschild | ---; ---; 294 | Jordan | 1932c |
| <i>garei</i> | ---; ---; 345 | da Costa Lima & Hathaway | 1946 |
| <i>garei</i> | | | |
| Rothschild | | | |
| <i>garei</i> | ---; ---; 256 | Wagner | 1938 |
| <i>islandicus</i> | | | |
| Wagner | | | |
| <i>hastatus</i> | ---; ---; 59 | Jordan & Rothschild | 1921b |
| Jordan & Rothschild | | | |

TABLE 1 - FLEAS (Continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|--|--------------------------|--------|
| <i>CERATOPHYLLUS</i> | | | |
| <i>hastatus</i> | ---; ---; 59 | Jordan & Rothschild | 1922 |
| <i>hastatus</i> Jordan & Rothschild | | | |
| <i>hastatus</i> <i>sikkinensis</i> Jordan & Rothschild | ---; ---; 143 | Jordan & Rothschild | 1922 |
| <i>hirundinis</i> (Curtis) | ---; ---; 256 | Wagner | 1927 |
| <i>hirticus</i> Jordan & Rothschild | ---; ---; 256 | Jordan & Rothschild | 1923 |
| <i>hirundinus</i> (Curtis) | ---; ---; 256 | da Costa Lima & Hathaway | 1946 |
| | ---; ---; 345 | Argiropulo | 1937 + |
| <i>idoneus</i> Rothschild | ---; ---; 149 | Jordan & Rothschild | 1922c |
| <i>ilovaiskii</i> Wagner & Ioff | ---; ---; 162 | Kolpakova & Lippert | 1938 |
| | ---; ---; 256 | Ioff & Pokrowskaja | 1934 |
| <i>indoneus</i> Rothschild | ---; ---; 149 | Rothschild | 1919 |
| <i>iranus</i> Wagner & Argyropulo | ---; ---; 28 | Argiropulo & Yavrumov | 1937 + |
| <i>kaanakovi</i> Wagner | ---; ---; 76 | Hsiao | 1945 |
| <i>klossi</i> Rothschild | ---; ---; 149 | Kopstein | 1931 |
| <i>kozlovi</i> Wagner | ---; ---; 76 | Hsiao | 1945 |
| <i>laeviceps</i> Wagner | ---; ---; 162, 345, 354 | Wu | 1940 |
| | ---; experimentally infected with and experimental transmission of plague; 256 | Nikanoroff | 1929 |
| <i>laeviceps</i> <i>allobii</i> Wagner | ---; ---; 209 | Wu | 1940 |
| | ---; ---; 353 | Hsiao | 1945 |

TABLE 1 - FLEAS (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|-----------------------------|-------|
| <i>CERATOPHYLLUS</i> | | | |
| <i>laeviceps</i> <i>laeviceps</i> Wagner | ---; ---; 162, 256, 345, 354 | Hsiao | 1945 |
| <i>laeviceps</i> <i>mongolicus</i> Wagner | ---; ---; 210 | Wagner | 1930 |
| <i>laeviceps</i> <i>turkmenicus</i> Vlasov & Ioff | ---; ---; 318 | Ioff | 1940 |
| <i>lebedewi</i> Wagner | ---; ---; 166 | Wagner | 1933 |
| <i>levis</i> Jordan & Rothschild | ---; ---; 190 | Jordan & Rothschild | 1922a |
| <i>londiniensis</i> Rothschild | ---; ---; 342 | Buxton | 1924 |
| | ---; ---; 350 | Jordan & Rothschild | 1921c |
| <i>luculentus</i> Jordan & Rothschild | ---; ---; 256 | Jordan & Rothschild | 1923 |
| <i>lunatus</i> Jordan & Rothschild | ---; ---; 256 | da Costa Lima & Hathaway | 1946 |
| <i>macrophthalmus</i> Jordan & Rothschild | ---; ---; 162 | Jordan & Rothschild | 1915 |
| <i>maculatus</i> Wagner | ---; ---; 256 | Wagner | 1927a |
| <i>mokrzeckyi</i> Wagner | ---; naturally infected with plague; 162° | Tikhomirova et al. | 1935 |
| | ---; enters houses; 166, 345 | Ioff | 1928a |
| | ---; experimentally infected with and experimental transmission of plague; 256 | Nikanoroff | 1929 |
| | ---; ---; 256° | Golov & Ioff | 1928 |
| | ---; ---; 321 | Roshkovskaya | 1937 |

TABLE 1 - FLEAS (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|-----------------------------|--------------|
| <i>CERATOPHYLLUS</i> | | | |
| <i>mongolicus</i> Jordan & Rothschild | ---; ---; 256 | Anonymous | 1945 |
| <i>monstrosus</i> Wagner | ---; ---; 318 | Wagner | 1929 |
| <i>mustelae</i> Schilling | ---; ---; 256 | Ioff & Tiflow | 1932 |
| <i>nicanus</i> Jordan | ---; ---; 76 | Wu | 1940 |
| <i>nilgiriensis</i> Jordan & Rothschild | ---; in houses; 143° ---; ---; 143 | Iyengar Cragg | 1934 1921 |
| <i>orites</i> Jordan | ---; ---; 235 | da Costa Lima & Hathaway | 1946 |
| <i>penicilliger</i> Grube | ---; ---; 256 | Jordan | 1932c |
| <i>phaeopsis</i> Jordan & Rothschild | ---; ---; 76 | Wu | 1940 |
| <i>pilatus</i> Jordan & Rothschild | ---; ---; 144 | Jordan & Rothschild | 1922a |
| <i>praefectus</i> Jordan & Rothschild | ---; ---; 162 | Jordan & Rothschild | 1915 |
| <i>probatas</i> Jordan & Rothschild | ---; ---; 144 | Jordan & Rothschild | 1922a |
| <i>punensis</i> Jordan & Rothschild | ---; ---; 143 | Jordan & Rothschild | 1921c |
| <i>punjabensis</i> Jordan & Rothschild | ---; ---; 143, 235 | Jordan & Rothschild | 1921c |
| <i>retangulatus</i> Wahlgren | ---; ---; 256 | Jordan | 1932c |

TABLE 1 - FLEAS (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|---|-----------------------------|--------|
| <i>CERATOPHYLLUS</i> | | | |
| <i>runatus</i> Jordan & Rothschild | ---; ---; 256 | Jordan & Rothschild | 1923 |
| <i>ructious</i> Wagner | ---; ---; 256 | Wagner | 1927 |
| | ---; ---; 345 | Wagner | 1938 |
| <i>sarinus</i> Jordan & Rothschild | ---; ---; 317 | Jordan & Rothschild | 1921b |
| | ---; ---; 350 | Jordan & Rothschild | 1921c |
| <i>sauteri</i> (Rothschild) | ---; ---; 76, 77 | da Costa Lima & Hathaway | 1946 |
| <i>saxatilis</i> Ioff & Argyropulo | ---; ---; 28 | Ioff & Argyropulo | 1934 |
| <i>sciurorum</i> Schrank | ---; ---; 28, 35 | Ioff & Argyropulo | 1934 |
| | ---; ---; 256 | Wagner | 1927 |
| <i>sciurorum</i> <i>asiaticus</i> Ioff | ---; ---; 162 | Ioff | 1940 |
| <i>semanovi</i> Ioff | ---; ---; 256 | Ioff | 1940 |
| <i>silantiewi</i> Wagner | ---; ---; 256* | Tiflow & Pavlov | 1936 + |
| | ---; ---; 256 | Sukneff | 1927 |
| | ---; ---; 353 | Wu Lien Teh | 1923 |
| <i>simla</i> Jordan & Rothschild | ---; possible vector of typhus, Feb.-March; 143 | Mehta | 1937 |
| <i>simplex</i> Wagner | ---; ---; 256 | Wagner | 1927 |
| | ---; ---; 321 | Makarov | 1928 |
| <i>sincerus</i> Jordan & Rothschild | ---; ---; 154 | Jordan & Rothschild | 1921b |
| | ---; ---; 342 | Jordan & Rothschild | 1921c |

TABLE 1 - FLEAS (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|---|-----------------------------|--------|
| <i>CERATOPHYLLUS</i> | | | |
| <i>sinensis</i> Liu | ---; May-June, at altitudes of 1,000 feet; 76 | Liu | 1935 |
| <i>sinicus</i> Jordan | ---; May; 76 | Jordan | 1932 |
| <i>sodalis</i> Rothschild | ---; ---; 149 | Kopstein | 1931 |
| <i>spadir</i> Jordan & Rothschild | ---; ---; 59 | Jordan & Rothschild | 1921b |
| <i>sparsilis</i> Jordan & Rothschild | ---; ---; 76 | Wu | 1940 |
| <i>spinosus</i> Wagner | ---; ---; 162, 345 | da Costa Lima & Hathaway | 1946 |
| <i>stajnegeri</i> Jordan | ---; ---; 47 | da Costa Lima & Hathaway | 1946 |
| <i>styx</i> Rothschild | ---; ---; 162 | Tiflow & Ussov | 1939 + |
| | ---; ---; 256 | Wagner | 1927 |
| <i>tamias</i> Wagner | ---; ---; 256 | Wagner | 1927a |
| <i>tamilanus</i> Jordan & Rothschild | ---; ---; 70 | Jordan & Rothschild | 1921c |
| <i>terens</i> Jordan & Rothschild | ---; ---; 162 | Jordan & Rothschild | 1915 |
| | ---; ---; 256 | Sassuchin et al. | 1935 |
| <i>tesquor</i> Wagner | ---; ---; 256 | Sukneff | 1927 |
| <i>tesquorum</i> Wagner | ---; ---; 162 | Ioff | 1929 |
| | ---; ---; 194 | Wu | 1940 |
| | ---; experimental transmission of plague; 256° | Golov & Ioff | 1928 |
| | ---; naturally infected with plague; 256 | Konovalova | 1927 |
| | ---; all year; 256 | Polyak & Tumenskii | 1932 |

TABLE 1 - FLEAS (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|---|----------------------|
| <i>CERATOPHYLLUS</i> | | | |
| <i>tesquorum</i> Wagner (cont.) | ---; ---; 294 ---; ---; 321° ---; May-Jul.; 345° | Pavlovskii Boikov Ioff & Pokrovskaya | 1927 1929 1929 |
| <i>tesquorum</i> <i>famulus</i> (Jordan & Rothschild) | ---; ---; 76 | Wu | 1940 |
| <i>tesquorum</i> <i>jenissejensis</i> Wagner | ---; ---; 256 | Ioff | 1928 |
| <i>tesquorum</i> <i>mongolicus</i> Jordan & Rothschild | ---; ---; 76, 256, 353 | Hsiao | 1945 |
| <i>tesquorum</i> <i>sungaris</i> Jordan | ---; ---; 76, 194 ---; ---; 256 | Wu Anonymous | 1940 1944a |
| <i>tesquorum</i> <i>tesquorum</i> Wagner | ---; ---; 256 | Ioff | 1928 |
| <i>tolii</i> Wagner | ---; ---; 256 | Wagner | 1927 |
| <i>transbaikalicus</i> Tiflow & Pavlov | ---; ---; 256 | Tiflow & Pavlov | 1936 + |
| <i>transcaucasius</i> Ioff & Argyropulo | ---; ---; 28 | Ioff & Argyropulo | 1934 |
| <i>tribulin</i> Jordan | ---; ---; 162 | da Costa Lima & Matheway | 1946 |
| <i>triapinus</i> Wagner & Ioff | ---; ---; 162 ---; ---; 256 | Wagner & Ioff Sassuchin et al. | 1926 1935 |
| <i>vagabunda</i> (Boheman) | ---; ---; 31 | Jordan & Rothschild | 1920 |

TABLE 1 - FLEAS (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|------------------------------|---|-----------------------------|--------|
| <i>CERATOPHYLLUS</i> | | | |
| <i>vagabundus</i> | ---; ---; 256 | da Costa Lima & Hathaway | 1946 |
| <i>orientalis</i> Wagner | | | |
| <i>vlasovi</i> | ---; ---; 256 | Sassuchin et al. | 1935 |
| Ioff | ---; ---; 318 | Ioff | 1940 |
| <i>volgensis</i> | ---; ---; 256 | Wagner & Ioff | 1926 |
| Wagner & Ioff | | | |
| <i>walkeri</i> | ---; ---; 162 | Tiflow & Us'ov | 1939 + |
| Rothschild | ---; ---; 256 | Tiflow | 1930 |
| <i>CHAETOPSYLLA</i> | | | |
| <i>appropinquans</i> | ---; ---; 256 | Ioff & Tiflow | 1934 |
| Wagner | | | |
| <i>globiceps</i> | ---; ---; 35 | Wagner & Argyropulo | 1934 |
| Taschenberg | ---; ---; 158, 345 | da Costa Lima & Hathaway | 1946 |
| | ---; ---; 162. ---; in houses; 321 | Ioff & Tiflow | 1934 |
| <i>hangchowensis</i> | ---; ---; 76 | Hsiao | 1945 |
| Liu | | | |
| <i>homoeus</i> | ---; ---; 28, 59, 143, 162, 256 | Ioff & Tiflow | 1934 |
| Rothschild | | | |
| <i>homoeus</i> | ---; ---; 59 | da Costa Lima & Hathaway | 1946 |
| <i>oarenis</i> (Jordan) | | | |
| <i>homoeus</i> | ---; ---; 28, 31, 143, 256 | da Costa Lima & Hathaway | 1946 |
| <i>homoeus</i> Rothschild | | | |
| <i>korobkovi</i> | ---; ---; 162 | Wagner | 1938 |
| Tiflow & Kolpakova | ---; ---; 256 | da Costa Lima & Hathaway | 1946 |
| <i>lasius</i> | ---; ---; 31 | Ioff & Tiflow | 1934 |
| Rothschild | | | |
| <i>mikado</i> | ---; ---; 158 | Ioff & Tiflow | 1934 |
| Rothschild | | | |

TABLE 1 - FLEAS (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|-----------------------------|------|
| <i>CHAETOPSYLLA</i> | | | |
| <i>mirabilis</i> Ioff & Argyropulo | ---; ---; 28 | Ioff & Argyropulo | 1934 |
| <i>trichosa</i> Kohaut | ---; ---; 28, 162, 256 | Ioff & Tiflow | 1934 |
| | ---; ---; 345 | Wagner | 1935 |
| <i>dolabris</i> (Jordan & Rothschild) | ---; ---; 76 | Liu | 1936 |
| <i>jenissejensis</i> (Wagner) | ---; ---; 256 | da Costa Lima & Hathaway | 1946 |
| <i>CITELLOPHILUS</i> | | | |
| <i>simplex</i> (Wagner) | ---; ---; 28 | Wagner | 1935 |
| | ---; ---; 256 | da Costa Lima & Hathaway | 1946 |
| <i>tesquorum</i> Wagner | ---; capable of transmitting plague; 256 | Macchiavello | 1954 |
| <i>tesquorum</i> <i>altaicus</i> (Ioff) | ---; ---; 256 | da Costa Lima & Hathaway | 1946 |
| <i>tesquorum</i> <i>caucasicus</i> (Ioff) | ---; ---; 256 | da Costa Lima & Hathaway | 1946 |
| | ---; ---; 345 | Wagner | 1938 |
| <i>tesquorum</i> <i>famulus</i> (Jordan & Rothschild) | ---; ---; 76 | da Costa Lima & Hathaway | 1946 |
| <i>tesquorum</i> <i>mongolicus</i> (Jordan & Rothschild) | ---; ---; 76, 358 | Liu | 1936 |
| <i>tesquorum</i> <i>hungaris</i> (Jordan) | ---; ---; 194 | da Costa Lima & Hathaway | 1946 |
| <i>tesquorum</i> <i>tesquorum</i> (Wagner) | ---; ---; 256 | da Costa Lima & Hathaway | 1946 |
| <i>tesquorum</i> <i>transvolgensis</i> (Ioff) | ---; ---; 256 | da Costa Lima & Hathaway | 1946 |

TABLE 1 - FLEAS (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|---|-----------------------------|-------|
| <i>CITELLOPHILUS</i> | | | |
| <i>transcaucasicus</i> (Ioff & Argyropulo) | ---; ---; 28 | da Costa Lima & Hathaway | 1946 |
| <i>trispinus</i> (Wagner & Ioff) | ---; ---; 162, 326 | da Costa Lima & Hathaway | 1946 |
| <i>COPTOPSYLLA</i> | | | |
| <i>ardua</i> Jordan & Rothschild | ---; ---; 162 | Jordan & Rothschild | 1915 |
| <i>bairamaliensis</i> Wagner | ---; ---; 162 | Wagner | 1935 |
| | ---; ---; 318 | Ioff & Tiflow | 1934 |
| | ---; March; 354 | Wagner | 1929 |
| <i>lamellifer</i> Wagner | ---; ---; 162, 166, 318, 326 | Pavlovskii | 1927 |
| <i>lamellifer</i> <i>ardua</i> | ---; ---; 162 | Ioff & Tiflow | 1934 |
| Jordan & Rothschild | ---; ---; 256 | Sassuchin et al. | 1935 |
| <i>lamellifer</i> <i>fallax</i> | ---; ---; 162 | Ioff & Tiflow | 1934 |
| Ioff & Tiflow | ---; ---; 256 | Sassuchin et al. | 1935 |
| <i>lamellifer</i> <i>immanubriate</i> | ---; ---; 162, 293 | Ioff & Tiflow | 1934 |
| Ioff & Tiflow | ---; ---; 256 | Sassuchin et al. | 1935 |
| | ---; ---; 354 | Wagner | 1935 |
| <i>lamellifer</i> <i>lamellifer</i> (Wagner) | ---; ---; 256 | Sassuchin et al. | 1935 |
| | ---; Jan., March, Oct.-Dec.; 318 | Ioff & Tiflow | 1934 |
| | ---; ---; 354 | da Costa Lima & Hathaway | 1946 |
| <i>lamellifer</i> <i>rostrata</i> | ---; ---; 162, 256, 293, 326 | Ioff & Tiflow | 1934 |
| Ioff & Tiflow | | | |
| <i>CORRODOPSYLLA</i> | | | |
| <i>birulai</i> Ioff | ---; ---; 256 | Jordan | 1932b |

TABLE 1 - FLEAS (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|------------------------------|--------|
| <i>CRATYNIUS</i> <i>bartelsi</i> Jordan | ---; ---; 146 | Jordan | 1933 |
| <i>CTENOCEPHALIDES</i> <i>arabicus</i> (Jordan) | ---; ---; 25, 332 | da Costa Lima & Hathaway | 1946 |
| <i>canis</i> (Curtis) | ---; ---; 28 | Ioff & Argyropulo | 1934 |
| | ---; ---; 31°, 76° | Wu | 1940 |
| | ---; ---; 35 | Popov & Akhundov | 1934 |
| | ---; ---; 70, 76, 143, 145, 149, 256 | da Costa Lima & Hathaway | 1946 |
| | ---; rare, 77° | Chow & Huang | 1950 |
| | ---; ---; 151 | Jordan | 1938 |
| | ---; ---; 158° | Jameson | 1953 |
| | ---; ---; 162 | Rodionova | 1943 |
| | ---; possible vector of murine typhus and plague; 168° | Barnett & Toshioka | 1951 |
| | ---; ---; 174, 302 | Anonymous | 1944c |
| | ---; ---; 194 | Anonymous | 1946 |
| | ---; probable transmitter of plague; 317° | Anonymous | 1944 |
| | ---; experimentally infected with tularemia; 317 | Server Kamil & Sait Bilal | 1938 |
| | ---; enters houses; 345 | Argyropulo & Yavrumov | 1937 + |
| <i>felis</i> (Bouché) | ---; ---; 28 | Ioff & Argyropulo | 1934 |
| | ---; ---; 35 | Popov & Akhundov | 1934 |
| | ---; ---; 76° | Hsiao | 1945 |
| | ---; common; 77° | Chow & Huang | 1950 |
| | ---; vector capacity for plague, most common Sept.-Oct.; 143 | Walker et al. | 1931 |

TABLE 1 - FLEAS (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|-----------------------------|-------|
| <i>CTENOCEPHALIDES</i> | | | |
| <i>felis</i> (Bouché) (cont.) | ---; ---; 146 | Thompson | 1938a |
| | ---; ---; 158 | Jameson | 1953 |
| | ---; ---; 194 | Ono | 1939 |
| | ---; ---; 242 | Banks | 1919 |
| | ---; ---; 280 | Gilmour | 1934 |
| | ---; ---; 317 | Monziols & Collignon | 1920 |
| | ---; ---; 345 | Argiropulo & Yavrumov | 1937 |
| <i>felis</i> <i>felis</i> Bouché | ---; ---; 59, 143, 162, 342 | da Costa Lima & Hathaway | 1946 |
| | ---; ---; 70 | Thompson | 1937 |
| | ---; common; 76 | Chin & Li | 1943 |
| | ---; ---; 146 | Jordan | 1933 |
| | ---; capable of transmitting plague; 256 | Macchiavello | 1954 |
| <i>felis</i> <i>orientis</i> Jordan | ---; ---; 59, 143, 149, 190 | da Costa Lima & Hathaway | 1946 |
| | ---; ---; 70 | Thompson | 1937 |
| | ---; ---; 143° | Iyengar | 1934 |
| | ---; ---; 242 | Traub | 1951 |
| <i>musculi</i> (Sugimoto) | ---; ---; 77 | Chow & Huang | 1950 |
| <i>paradoxuri</i> Wagner | ---; ---; 70 | Thompson | 1937 |
| <i>CTENOCEPHALUS</i> | | | |
| <i>cantis</i> (Curtis) | ---; ---; 76 | Patton | 1926 |
| | ---; ---; 77 | Neumann | 1913 |
| | ---; ---; 118 | Stepanov | 1931 |
| | ---; ---; 143, 235 (Occasionally attacks man) | Sharif | 1930 |
| | ---; most active Oct.-Dec.; 144 | Herivaux & Toumanoff | 1948 |

TABLE 1 - FLEAS (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--------------------------|---|----------------------|--------|
| <i>CTENOCEPHALUS</i> | | | |
| <i>canis</i> (Curtis) | ---; jungle in high altitudes; 145 | Jordan & Rothschild | 1926 |
| | ---; ---; 146 | Kopstein | 1931 |
| | ---; ---; 149 | Jordan & Rothschild | 1922c |
| | ---; ---; 151 | Patton | 1920 |
| | ---; July; 154°. ---; ---; 342° | Buxton | 1924 |
| | ---; enters houses; 162°. ---; ---; 345° | Ioff | 1928a |
| | ---; ---; 242 | Banks | 1919 |
| | ---; ---; 256 | Sassuchin & Tiflow | 1933 |
| | ---; ---; 326 | Khodukin | 1928 |
| <i>felis</i> Bouché | ---; ---; 11, 59 (Occasionally attacks man) | Sharif | 1930 |
| | ---; June-July; 76° | Rothschild | 1914 |
| | ---; ---; 76 | Patton | 1926 |
| | ---; ---; 118 | Stepanov | 1931 |
| | ---; naturally infected with <i>Herpetomonas</i> sp.; 143 | Patton | 1914 |
| | ---; ---; 143° | Pavlovskii | 1927 |
| | ---; most active Oct.-Dec.; 144 | Merivaux & Toumanoff | 1948 |
| | ---; ---; 145, 146 | Kopstein | 1931 |
| | ---; ---; 149 | Jordan & Rothschild | 1922b |
| | ---; Jul.-Aug.; 154°. ---; Sept.; 342° | Buxton | 1924 |
| | ---; ---; 162 | Tiflow & Ussov | 1939 + |
| | ---; ---; 256 | Sassuchin & Tiflow | 1933 |
| | ---; July; 321° | Makarov | 1928 |
| | ---; ---; 326 | Khodukin | 1928 |

TABLE 1 - FLEAS (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|-----------------------------|------|
| <i>CTENOCEPHALUS</i> | | | |
| <i>felis</i> | ---; ---; 11, 59, 70, 143, 149, 190, 242 | Sharif | 1930 |
| <i>orientis</i> Jordan | ---; in houses; 143° | Iyengar | 1934 |
| <i>inoratus</i> Wagner | ---; ---; 345 | Wagner | 1916 |
| <i>musculi</i> Sugimoto | ---; ---; 76 | Raynal | 1940 |
| <i>CTENOPHTHALMUS</i> | | | |
| <i>acuminatus</i> Ioff & Argyropulo | ---; ---; 28 | Ioff & Argyropulo | 1934 |
| <i>agyrtes</i> Heller | ---; ---; 168 | Hsiao | 1948 |
| | ---; ---; 256 | Sassuchin & Tiflow | 1936 |
| <i>agyrtes</i> <i>eurous</i> Jordan & Rothschild | ---; ---; 256 | da Costa Lima & Hathaway | 1946 |
| <i>arvalis</i> Wagner & Ioff | ---; ---; 256 | Wagner & Ioff | 1926 |
| <i>assimilis</i> Taschenberg | ---; ---; 256 | Ioff & Tiflow | 1932 |
| <i>bisocodentatus</i> Kolenatti | ---; ---; 256 | Wagner | 1927 |
| <i>bogatschevi</i> Wagner & Argyropulo | ---; ---; 35 | Wagner & Argyropulo | 1934 |
| <i>breviatus</i> Wagner & Ioff | ---; ---; 162 | Ioff | 1929 |
| | ---; ---; 256 | Sassuchin & Tiflow | 1933 |
| <i>congener</i> Rothschild | ---; ---; 158, 168 | Jameson | 1933 |
| | ---; ---; 256 | Wagner | 1927 |
| <i>congener</i> <i>secundus</i> Wagner | ---; ---; 256 | Jordan & Rothschild | 1920 |
| <i>congeneroides</i> Wagner | ---; ---; 256 | Anonymous | 1945 |

TABLE 1 - FLEAS (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|---|-----------------------------|-------|
| <i>CTENOPHTHALMUS</i> | | | |
| <i>crudelis</i> Jordan | ---; ---; 59 | Jordan | 1932a |
| <i>dahuricus</i> Ioff | ---; ---; 256 | da Costa Lima & Hathaway | 1946 |
| <i>dilatatus</i> Wagner | ---; ---; 162 | Wu | 1940 |
| <i>dinormus</i> Jordan | ---; ---; 76 | Wu | 1940 |
| <i>dolichus</i> (Rothschild) | ---; ---; 162 | da Costa Lima & Hathaway | 1946 |
| | ---; ---; 256 | Ioff | 1940 |
| | ---; ---; 354 | Nikanorov & Knyazevskii | 1927 |
| <i>dolichus</i> <i>bair</i> Ioff | ---; ---; 318 | Ioff | 1940 |
| <i>dolichus</i> <i>dolichus</i> Rothschild | ---; ---; 256 | Ioff | 1940 |
| <i>dolichus</i> <i>idae</i> Ioff | ---; ---; 326 | Ioff | 1940 |
| <i>dolichus</i> <i>ustjurt</i> Ioff | ---; ---; 256 | Ioff | 1940 |
| <i>dur</i> (Jordan & Rothschild) | ---; ---; 162 | Jordan & Rothschild | 1915 |
| <i>fissura</i> (Wagner) | ---; ---; 28 | Ioff & Argyropulo | 1934 |
| | ---; ---; 118 | Wagner | 1929 |
| | ---; ---; 345 | Wagner | 1935 |
| <i>formosanus</i> Svihla | ---; ---; 77 | da Costa Lima & Hathaway | 1946 |
| <i>gigantospalaxis</i> Ioff | ---; ---; 256 | Ioff | 1935 |
| <i>golovi</i> Ioff & Tiflow | ---; mountain 1,600 meters above sea level; 28. ---; mountain 2,000 meters above sea level; 35. ---; ---; 256 | Argyropulo | 1936 |

TABLE 1 - FLEAS (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|-----------------------------|--------|
| <i>CTENOPHTHALMUS</i> | | | |
| <i>golovi</i> | ---; ---; 35 | Argyropulo | 1937 + |
| <i>alpestris</i> Argyropulo | ---; ---; 345 | da Costa Lima & Hathaway | 1946 |
| <i>golovi</i> <i>bifurcus</i> Ioff | ---; ---; 345 | Ioff | 1940 |
| <i>golovi</i> <i>elegans</i> Argyropulo | ---; ---; 28, 345 | da Costa Lima & Hathaway | 1946 |
| <i>golovi</i> <i>golovi</i> Ioff | ---; ---; 256 | da Costa Lima & Hathaway | 1946 |
| <i>idae</i> Ioff | ---; ---; 256 | Sassuchin et al. | 1935 |
| <i>intermedius</i> Argyropulo | ---; ---; 345 | Argyropulo | 1936 |
| <i>iranus</i> Argyropulo | ---; ---; 345 | Wagner | 1938 |
| <i>isochaetus</i> Wagner | ---; ---; 345 | da Costa Lima & Hathaway | 1946 |
| <i>kirschenblatti</i> Argyropulo | ---; at altitudes of 1,700 meters; 118 | Argyropulo | 1936 |
| | ---; ---; 256 | da Costa Lima & Hathaway | 1946 |
| <i>orientalis</i> Wagner | ---; ---; 256 | Sassuchin & Tiflow | 1933 |
| | ---; ---; 321 | Wagner & Ioff | 1926 |
| <i>parvus</i> Jordan | ---; ---; 76 | Wu | 1940 |
| <i>parvus</i> Argyropulo | ---; ---; 256, 345 | Wagner | 1938 |
| <i>phrator</i> Jordan | ---; ---; 345 | Jordan | 1929 |
| <i>pisticus</i> Jordan & Rothschild | ---; ---; 256 | Jordan & Rothschild | 1921 |

TABLE 1 - FLEAS (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|-----------------------------|--------|
| <i>CTENOPHTHALMUS</i> | | | |
| <i>poller</i> Wagner & Ioff | ---; ---; 162 | Ioff | 1928a |
| | ---; experimental transmission of plague; 256 | Nikanoroff | 1929 |
| | ---; naturally infected with plague; 256 | Tumanskii & Polyak | 1932 |
| <i>proximus</i> (Wagner) | ---; ---; 35, 256 | Wagner & Argyropulo | 1934 |
| | ---; ---; 345 | da Costa Lima & Hathaway | 1946 |
| <i>rettigi</i> Rothschild | ---; ---; 256 | Argyropulo | 1936 |
| <i>secundus</i> Wagner | ---; ---; 35, 256 | Wagner & Argyropulo | 1934 |
| | ---; ---; 345 | Wagner | 1935 |
| <i>secundus</i> <i>asiaticus</i> Argyropulo | ---; ---; 345 | Argyropulo | 1936 |
| <i>secundus</i> <i>secundus</i> (Wagner) | ---; ---; 256, 345 | da Costa Lima & Hathaway | 1946 |
| <i>solutus</i> Jordan & Rothschild | ---; ---; 256 | da Costa Lima & Hathaway | 1946 |
| <i>spalacis</i> Jordan & Rothschild | ---; ---; 28 | Ioff & Argyropulo | 1934 |
| | ---; ---; 256° | Pavlovskii | 1931 + |
| | ---; ---; 256 | Ioff | 1928 |
| | ---; ---; 294 | Pavlovskii | 1927 |
| | ---; ---; 345° | Ioff | 1928a |
| <i>tatianae</i> Argyropulo | ---; at altitudes of 1,7000 meters above sea level; 118 | Argyropulo | 1936 |
| <i>terres</i> Ioff & Argyropulo | ---; ---; 28 | Ioff & Argyropulo | 1934 |

TABLE 1 - FLEAS (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|---|-----------------------------|--------|
| <i>CTENOPHTHALMUS</i> | | | |
| <i>typhlus</i> Motschulsky | ---; ---; 256 | Wagner | 1938 |
| <i>uralospalacis</i> Tiflo & Usov | ---; ---; 162 | da Costa Lima & Hathaway | 1946 |
| <i>wagneri</i> Tiflo | ---; ---; 162 | Tiflow & Usov | 1939 + |
| | ---; ---; 256* | Pavlovskii | 1931 + |
| | ---; ---; 256 | Tiflow | 1930 |
| | ---; naturally infected with plague; 345 | Tiflow | 1946 |
| <i>wagneri</i> <i>schuriscus</i> Ioff | ---; ---; 256, 321, 345 | Ioff | 1940 |
| <i>yunnanus</i> Jordan | ---; ---; 76 | Wu | 1940 |
| <i>CTENOPHYLLUS</i> | | | |
| <i>armatus</i> (Wagner) | ---; ---; 256 | da Costa Lima & Hathaway | 1946 |
| <i>hirtiorus</i> (Jordan & Rothschild) | ---; ---; 194, 256 | da Costa Lima & Hathaway | 1946 |
| <i>rigidus</i> Darskaya | ---; ---; 158, 168 | Jameson | 1953 |
| <i>subarmatus</i> (Wagner) | ---; ---; 256 | da Costa Lima & Hathaway | 1946 |
| <i>CTENOPSYLLA</i> | | | |
| <i>taschenbergi</i> Wagner | ---; ---; 28 | Ioff & Argyropulo | 1934 |
| <i>sexdentata</i> Wagner | ---; ---; 162 | Wagner | 1930 |
| <i>macoul'i</i> Duges | ---; ---; 76 | Hertig & Nuane | 1929 |
| | ---; enters houses; 162 | Ioff | 1928a |
| | ---; ---; 294 | Pavlovskii | 1927 |

TABLE 1 - FL²AS (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|---|------------------------|--------|
| <i>CTENOPSYLLUS</i> | | | |
| <i>algira</i> Jordan & Rothschild | ---; ---; 345 | Argyropulo | 1936 |
| <i>algira</i> <i>popovi</i> Wagner & Argyropulo | ---; ---; 33 | Wagner & Argyropulo | 1934 |
| <i>bidentatus</i> Kolenatti | ---; ---; 256 | Sassuchin & Tiflow | 1936 |
| <i>monoetena</i> Kolenatti | ---; ---; 256 | Wagner | 1927 |
| <i>musculi</i> Duges | ---; enters houses; 256 | Ioff | 1928a |
| <i>segnis</i> (Schönherr) | ---; ---; 31, 76, 139 | Wu | 1940 |
| | ---; ---; 35 | Wagner & Argyropulo | 1934 |
| | ---; ---; 162 | Tiflow & Ussov | 1939 + |
| | ---; ---; 256* | Anonymous | 1945 |
| <i>sexdentata</i> Wagner | ---; ---; 162 | Wagner | 1930 |
| | ---; ---; 256 | Sassuchin & Tiflow | 1936 |
| <i>sicietas</i> Tiflow & Kolpakova | ---; ---; 162 | Wagner | 1938 |
| <i>subarmatus</i> Wagner | ---; ---; 31 | Wu | 1940 |
| <i>taschenbergi</i> Wagner | ---; ---; 28, 35, 256 | Wagner & Argyropulo | 1934 |
| | ---; ---; 162 | Tiflow & Ussov | 1939 + |
| | ---; ---; 345 | Wagner | 1935 |
| <i>CTENOPHTHALMUS</i> | | | |
| <i>dinormus</i> Jordan | ---; ---; 76 | Malao | 1945 |

TABLE 1 - FLEAS (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|-----------------------------|------|
| <i>CTENOPHTHALMUS</i> | | | |
| <i>formosanus</i> Svihla | ---; ---; 77 | da Costa Lima & Hathaway | 1946 |
| <i>parvus</i> Jordan | ---; ---; 76 | Hsiao | 1945 |
| <i>yoernani</i> Jordan | ---; ---; 76 | Hsiao | 1945 |
| <i>CYSTIPSYLLA</i> | | | |
| <i>kiritschenkoi</i> Wagner | ---; ---; 210 | Wagner | 1930 |
| <i>DASYPSYLLUS</i> | | | |
| <i>gallinulae</i> (Dale) | ---; ---; 242 | Traub | 1951 |
| <i>klossi</i> (Rothschild) | ---; ---; 149 | da Costa Lima & Hathaway | 1946 |
| <i>DERMATOPHILUS</i> | | | |
| <i>oasoata</i> (Enderlein) | ---; ---; 76 | Roubaud | 1925 |
| <i>oascigena</i> (Jordan & Rothschild) | ---; ---; 76 | Wu | 1940 |
| <i>lagrangei</i> Roubaud | ---; ---; 76 | Wu | 1940 |
| <i>penetrans</i> (Linne) | ---; ---; 76 | Roubaud | 1925 |
| <i>DIAMANUS</i> | | | |
| <i>mandarinus</i> (Jordan & Rothschild) | ---; ---; 76 | Hsiao | 1945 |
| <i>montanus</i> Baker | ---; ---; 76 | Wu | 1940 |
| <i>montanus</i> <i>montanus</i> (Baker) | ---; ---; 76 | Hsiao | 1945 |
| <i>FORATOPSYLLA</i> | | | |
| <i>birulai</i> Ioff | ---; ---; 256 | Ioff | 1928 |
| <i>ooreana</i> Derezhaya | ---; ---; 158, 168 | Jameson | 1953 |

TABLE 1 - FLEAS (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|---|-----------------------------|-------|
| <i>DGRATOPSYLLA</i> | | | |
| <i>dampfi</i> Argyropulo | ---; ---; 345 | da Costa Lima & Hathaway | 1946 |
| <i>dasyneumus</i> Rothschild | ---; ---; 294 | Pavlovskii | 1927 |
| <i>ochotonae</i> Kishida | ---; ---; 158 | Jameson | 1953 |
| <i>ECHIDNOPHAGA</i> | | | |
| <i>gallinacea</i> (Westwood) | ---; ---; 28, 59, 70, 143, 162, 317, 354 | Sharif | 1930 |
| | ---; ---; 31, 76 | Wu | 1940 |
| | ---; ---; 35, 345 | Ioff | 1928 |
| | ---; ---; 59° | Kelsall | 1927 |
| | ---; enters houses; 143° | Iyengar | 1934 |
| | ---; ---; 158° | Jameson | 1953 |
| | ---; ---; 158 | Ohtomo et al. | 1937 |
| | ---; ---; 162, 256, 345 (Sometimes attacks man) | Pavlovskii | 1927 |
| | ---; ---; 174, 302 | Anonymous | 1944c |
| | ---; ---; 256 | Sassuchin et al. | 1930 |
| | ---; ---; 318 | Vlasov & Ioff | 1937 |
| | ---; ---; 326 | Khodukin | 1928 |
| <i>gallinaea</i> <i>gallinaea</i> (Westwood) | ---; ---; 28, 76, 143 | da Costa Lima & Hathaway | 1946 |
| <i>liopus</i> Jordan & Rothschild | ---; ---; 143 | Sharif | 1930 |
| <i>neohantzi</i> Wagner | ---; ---; 162, 354 | da Costa Lima & Hathaway | 1946 |
| | ---; ---; 256 | Sassuchin et al. | 1935 |

TABLE 1 - FLEAS (continued)

| SPECIES | BREEDING HABITATS, ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|---|-----------------------------|------|
| <i>ECHIDNOPHAGA</i> <i>popovi</i> Ioff & Argyropulo | ---; ---; 28 | Ioff & Argyropulo | 1934 |
| <i>EUCTENOPHTHALMUS</i> <i>arvalis</i> (Wagner) | ---; ---; 256 | da Costa Lima & Hathaway | 1946 |
| <i>assimilis</i> (Taschenberg) | ---; ---; 256 | da Costa Lima & Hathaway | 1946 |
| <i>bogatschevi</i> (Wagner & Argyropulo) | ---; ---; 35 | da Costa Lima & Hathaway | 1946 |
| <i>breviatus</i> (Wagner & Ioff) | ---; ---; 256 | da Costa Lima & Hathaway | 1946 |
| <i>congener</i> Rothschild | ---; ---; 256 | da Costa Lima & Hathaway | 1946 |
| <i>congeneroides</i> (Wagner) | ---; ---; 256 | da Costa Lima & Hathaway | 1946 |
| <i>intermedius</i> (Argyropulo) | ---; ---; 345 | da Costa Lima & Hathaway | 1946 |
| <i>iranus</i> (Argyropulo) | ---; ---; 345 | da Costa Lima & Hathaway | 1946 |
| <i>orientalis</i> (Wagner) | ---; ---; 256 | da Costa Lima & Hathaway | 1946 |
| <i>parvus</i> (Argyropulo) | ---; ---; 345 | da Costa Lima & Hathaway | 1946 |
| <i>pollex</i> (Wagner & Ioff) | ---; ---; 256 | da Costa Lima & Hathaway | 1946 |
| <i>tatianae</i> (Argyropulo) | ---; ---; 256, 345 | da Costa Lima & Hathaway | 1946 |
| <i>teres</i> (Ioff & Argyropulo) | ---; ---; 28, 256 | da Costa Lima & Hathaway | 1946 |
| <i>uncinatus</i> (Wagner) | ---; ---; 256 | da Costa Lima & Hathaway | 1946 |
| <i>wagneri</i> (Tiflow) | ---; ---; 256 | da Costa Lima & Hathaway | 1946 |

TABLE 1 - FLEAS (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|--------------------------------------|----------------------|
| <i>FRONTOPSYLLA</i> | | | |
| <i>elata</i> | ---; ---; 28 | Liu | 1936 |
| (Jordan & Rothschild) | ---; ---; 162, 166, 256, 318, 326 | Pavlovskii | 1927 |
| <i>elata</i> | ---; ---; 194 | Wu | 1940 |
| <i>botis</i> Jordan | | | |
| <i>elata</i> | ---; ---; 28 | Ioff & Argyropulo | 1934 |
| <i>caucasica</i> Ioff & Argyropulo | | | |
| <i>elata</i> | ---; ---; 162 | da Costa Lima & Hathaway | 1946 |
| <i>elata</i> (Jordan & Rothschild) | | | |
| <i>elata</i> | ---; ---; 28 | Wagner | 1935 |
| <i>humida</i> Ioff & Argyropulo | ---; ---; 162 | da Costa Lima & Hathaway | 1946 |
| <i>elatoides</i> Wagner | ---; ---; 162 | da Costa Lima & Hathaway | 1946 |
| <i>frontalis</i> gud Argyropulo | ---; ---; 345 | da Costa Lima & Hathaway | 1946 |
| <i>hotera</i> Wagner | ---; ---; 353 | Hsiao | 1945 |
| <i>luculenta</i> (Jordan & Rothschild) | ---; ---; 194 ---; ---; 256 | Liu Wu | 1936 1940 |
| <i>luculenta</i> <i>luculenta</i> (Jordan & Rothschild) | ---; ---; 76, 194, 256 | da Costa Lima & Hathaway | 1946 |
| <i>luculenta</i> <i>parilis</i> Jordan | ---; ---; 209 ---; ---; 210 ---; ---; 353 | Liu Wu Hsiao | 1936 1940 1945 |
| <i>macrophthalmus</i> (Jordan & Rothschild) | ---; ---; 31, 35, 162, 256. ---; on steppes; 345 ---; ---; 318 | Wagner & Argyropulo Vlasov & Ioff | 1934 1937 |

TABLE 1 - FLEAS (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|---|-----------------------------|-------|
| <i>FRONTOPSYLLA</i> | | | |
| <i>ornata</i> Tiflow | ---; ---; 162 | da Costa Lima & Hathaway | 1946 |
| <i>protera</i> Wagner | ---; ---; 166 | Wagner | 1933 |
| | ---; ---; 294 | da Costa Lima & Hathaway | 1946 |
| <i>semura</i> Wagner & Ioff | ---; Jan.-March, Oct.-Dec.; 162. ---; Jan.-March; 256 | Ioff | 1928a |
| | ---; experimentally infected with plague; 256 | Tumanskii & Polyak | 1932 |
| | ---; ---; 294 | Pavlovskii | 1927 |
| | ---; ---; 321 | Makarov | 1928 |
| | ---; ---; 345 | da Costa Lima & Hathaway | 1946 |
| <i>spadix</i> (Jordan & Rothschild) | ---; ---; 59 | Wu | 1940 |
| | ---; ---; 76 | Liu | 1936 |
| <i>spadix</i> <i>cansa</i> Jordan | ---; ---; 76 | Wu | 1940 |
| <i>spadix</i> <i>spadix</i> (Jordan & Rothschild) | ---; ---; 59, 76 | Hsiao | 1945 |
| <i>eubula</i> Wagner | ---; ---; 256, 353 | da Costa Lima & Hathaway | 1946 |
| <i>wagneri</i> Ioff | ---; ---; 209 | Liu | 1936 |
| | ---; ---; 210, 256 | Wu | 1940 |
| | ---; ---; 353 | Hsiao | 1945 |
| <i>GERBILLOPHILUS</i> | | | |
| <i>argutus</i> (Jordan & Rothschild) | ---; ---; 143 | da Costa Lima & Hathaway | 1946 |
| <i>consimilis</i> Wagner | ---; ---; 28, 345 | Wagner | 1935 |

TABLE 1 - FLEAS (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|---|--|----------------|
| <i>GERBILLOPHILUS</i> | | | |
| <i>iranus</i> (Wagner & Argyropulo) | ---; ---; 35 | da Costa Lima & Hathaway | 1946 |
| <i>laeviceps</i> Wagner | ---; ---; 28, 345 | Wagner | 1935 |
| <i>laeviceps</i> <i>ellobi</i> Wagner | ---; ---; 76, 353 | da Costa Lima & Hathaway | 1946 |
| <i>laeviceps</i> <i>laeviceps</i> (Wagner) | ---; ---; 76, 162, 345 | da Costa Lima & Hathaway | 1946 |
| <i>tersus</i> (Jordan & Rothschild) | ---; ---; 162 | da Costa Lima & Hathaway | 1946 |
| <i>GEUSIBIA</i> | | | |
| <i>torosa</i> Jordan | ---; ---; 76 | Haiao | 1945 |
| <i>HECTOPSYLLA</i> | | | |
| <i>psittaci</i> Frauenfeld | ---; ---; 70 | da Costa Lima & Hathaway | 1946 |
| <i>HOPLOPSYLLUS</i> | | | |
| <i>glacialis</i> <i>profugus</i> Jordan | ---; ---; 162 | da Costa Lima & Hathaway | 1946 |
| <i>HYSTRICOPSYLLA</i> | | | |
| <i>satunini</i> Wagner | ---; 1,700 meters above sea level; 118 ---; ---; 345 | Argyropulo da Costa Lima & Hathaway | 1936 1946 |
| <i>talpae</i> (Curtis) | ---; ---; 162 ---; ---; 256 | Tiflow & Ussov Ioff & Tiflow | 1939 + 1932 |
| <i>tripectinata</i> (Tiraboschi) | ---; ---; 168 | Haiao | 1948 |
| <i>ISCHNOPSYLLUS</i> | | | |
| <i>communis</i> Jordan & Rothschild | ---; ---; 76 ---; ---; 77 | Wu Chow & Huang | 1940 1950 |

TABLE 1 - FLEAS (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|---|-----------------------------|--------|
| <i>ISCHNOPSYLLUS</i> | | | |
| <i>dolosus</i> Dampf | ---; ---; 28, 256 | da Costa Lima & Hathaway | 1946 |
| <i>elongata</i> (Curtis) | ---; ---; 256 | da Costa Lima & Hathaway | 1946 |
| <i>hexactenus</i> Kolenati | ---; ---; 162 | Tiflow & Usov | 1939 + |
| <i>hexactenus</i> <i>hexactenus</i> (Kolenati) | ---; ---; 256 | da Costa Lima & Hathaway | 1946 |
| <i>hexactenus</i> <i>petropolitanus</i> (Wagner) | ---; ---; 256 | da Costa Lima & Hathaway | 1946 |
| <i>iae</i> Jordan | ---; ---; 76 | da Costa Lima & Hathaway | 1946 |
| <i>indicus</i> Jordan | ---; ---; 70, 76, 143 | da Costa Lima & Hathaway | 1946 |
| <i>intermedia</i> Rothschild | ---; ---; 256 | Ioff & Tiflow | 1932 |
| <i>kolenatii</i> Wagner | ---; ---; 256 | Wagner | 1930 |
| <i>nsedhamia</i> Hall | ---; ---; 76 | Hsiao | 1945 |
| | ---; ---; 158 | Jameson | 1953 |
| <i>obscura</i> Wagner | ---; ---; 162 | Tiflow & Usov | 1939 + |
| | ---; ---; 256 | da Costa Lima & Hathaway | 1946 |
| <i>octactenus</i> (Kolenati) | ---; ---; 28, 101, 256 | da Costa Lima & Hathaway | 1946 |
| | ---; ---; 35 | Wagner & Argyropulo | 1934 |
| <i>tatsienhi</i> Sugimoto | ---; ---; 76, 77 | Wu | 1940 |
| <i>teres</i> Jordan | ---; ---; 345 | Jordan | 1929 |
| <i>variabilis</i> Wagner | ---; ---; 256 | da Costa Lima & Hathaway | 1946 |
| <i>wui</i> Hall | ---; ---; 76 | Wu | 1940 |

TABLE 1 - FLEAS (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|---|-----------------------------|-------|
| <i>LAGAROPSYLLA</i> | | | |
| <i>mera</i> Jordan & Rothschild | ---; ---; 146 | Jordan & Rothschild | 1921a |
| <i>micula</i> Jordan & Rothschild | ---; ---; 59 | da Costa Lima & Hathaway | 1946 |
| <i>putilla</i> Jordan & Rothschild | ---; ---; 143 | Jordan & Rothschild | 1921a |
| <i>LEPTOPSYLLA</i> | | | |
| <i>aegnis</i> (Schönherr) | ---; ---; 158, 168 | Jameson | 1953 |
| <i>algira</i> <i>popovi</i> Wagner & Argyropulo | ---; ---; 345 | da Costa Lima & Hathaway | 1946 |
| <i>himalaia</i> Rothschild | ---; ---; 143 | Iyengar | 1934 |
| <i>musculi</i> Duges | ---; ---; 59, 143 | Cragg | 1921 |
| | ---; in houses, possible vector of endemic typhus; 76 | Liu & Zia | 1940 |
| | ---; bites occasionally; 76* | Liu & Zia | 1941 |
| | ---; all year; 76 | Yang et al | 1939 |
| | ---; Feb., Oct.-Nov.; 118 | Stepanov | 1931 |
| | ---; ---; 149 | Kopstein | 1931 |
| | ---; Oct.; 154, 342 | Buxton | 1924 |
| | ---; May, Oct.; 168 | Hsiao | 1948 |
| | ---; ---; 256 | Pokrovskii | 1935 |
| | ---; ---; 294 | Pavlovskii | 1927 |
| <i>pavlovskii</i> Ioff | ---; ---; 256 | Ioff | 1928 |
| <i>pectiniceps</i> (Wagner) | ---; ---; 256 | Pavlovskii | 1927 |

TABLE 1 - FLEAS (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|---|-----------------------------|------|
| LEPTOPSYLLA | | | |
| <i>segnis</i> (Schönherr) | ---; ---; 35 | Popov & Akhundov | 1934 |
| | ---; ---; 70 | Thompson | 1938 |
| | ---; naturally infected with typhus; 76 | Liu & Zia | 1941 |
| | ---; ---; 77 | Chow & Huang | 1950 |
| | ---; ---; 133 | Landauer | 1938 |
| | ---; ---; 139 | Hsiao | 1945 |
| | ---; ---; 143* | George & Timothy | 1941 |
| | ---; ---; 144 | Sorel | 1937 |
| | ---; ---; 158 | Ohtoma et al. | 1937 |
| | ---; possible vector of murine typhus; 168* | Barnett & Toshioka | 1951 |
| | ---; ---; 321 | Roshkovskaya | 1937 |
| | ---; ---; 342 | Anonymous | 1934 |
| <i>sexdentata</i> Wagner | ---; ---; 162 | da Costa Lima & Hathaway | 1946 |
| <i>siolistas</i> Tiflow & Kolpakova | ---; ---; 256 | da Costa Lima & Hathaway | 1946 |
| <i>taschenbergi</i> Wagner | ---; ---; 256 | da Costa Lima & Hathaway | 1946 |
| LOENOPSYLLA | | | |
| <i>cheopis</i> (Rothschild) | ---; ---; 144 | Kerandel | 1915 |
| | ---; ---; 242* | Banks | 1919 |
| MACROSTYLOPHORA | | | |
| <i>borneensis</i> (Jordan) | ---; ---; 145 | da Costa Lima & Hathaway | 1946 |
| <i>euteles</i> (Jordan & Rothschild) | ---; ---; 76 | da Costa Lima & Hathaway | 1946 |
| <i>fimbriata</i> (Jordan & Rothschild) | ---; ---; 143 | da Costa Lima & Hathaway | 1946 |

TABLE 1 - FLEAS (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|-----------------------------|------|
| MACROSTYLOPHORA | | | |
| <i>hastata</i> <i>hastata</i> (Jordan & Rothschild) | ---; ---; 59 | da Costa Lima & Hathaway | 1946 |
| <i>hastata</i> <i>sikkimensis</i> (Jordan & Rothschild) | ---; ---; 143 | da Costa Lima & Hathaway | 1946 |
| <i>hastata</i> <i>tonkinensis</i> Jordan | ---; ---; 144 | da Costa Lima & Hathaway | 1946 |
| <i>heinrichi</i> Jordan | ---; ---; 59 | da Costa Lima & Hathaway | 1946 |
| <i>levis</i> (Jordan & Rothschild) | ---; ---; 190 | da Costa Lima & Hathaway | 1946 |
| <i>lupata</i> <i>banana</i> Jordan | ---; ---; 59 | da Costa Lima & Hathaway | 1946 |
| <i>lupata</i> <i>lupata</i> (Jordan & Rothschild) | ---; ---; 143 | da Costa Lima & Hathaway | 1946 |
| <i>phillipsi</i> (Jordan) | ---; ---; 70 | da Costa Lima & Hathaway | 1946 |
| <i>pilata</i> (Jordan & Rothschild) | ---; ---; 190 | da Costa Lima & Hathaway | 1946 |
| <i>probata</i> (Jordan & Rothschild) | ---; ---; 190 | da Costa Lima & Hathaway | 1946 |
| <i>unionalis</i> Jordan | ---; ---; 59 | da Costa Lima & Hathaway | 1946 |
| MALARAUS | | | |
| <i>loffii</i> (Darskaya) | ---; ---; 168 | Jameson | 1933 |
| <i>penicilliger</i> (Gruba) | ---; ---; 158 | Jameson | 1933 |
| MEGABOTHRIS | | | |
| <i>oaspis</i> Tiflow | ---; ---; 28, 162 | Wagner | 1935 |

TABLE 1 - FLEAS (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|---|-----------------------------|--------|
| <i>MEGABOTERIS</i> <i>mustelae</i> Schill. | ---; 1,700 meters above sea level; 118 | Argyropulo | 1936 |
| <i>saxatilis</i> Ioff & Argyropulo | ---; ---; 28 | Wagner | 1935 |
| <i>MESOPSYLLA</i> <i>apscheronica</i> Wagner & Argyropulo | ---; ---; 35 | Wagner & Argyropulo | 1934 |
| | ---; ---; 245 | da Costa Lima & Hathaway | 1946 |
| <i>euota</i> Dampf | ---; ---; 162 | Ioff | 1929 |
| | ---; ---; 166, 294, 318, 326 | Pavlovskii | 1927 |
| <i>euota</i> <i>dampf</i> Wagner & Ioff | ---; experimental transmission of plague; 256 | Nikanoroff | 1929 |
| <i>hebes</i> Jordan & Rothschild | ---; ---; 162, 256 | Ioff | 1929 |
| | ---; ---; 256* | Kuzenkov | 1929 |
| <i>hebes</i> <i>dampf</i> Wagner & Ioff | ---; ---; 256 | da Costa Lima & Hathaway | 1946 |
| <i>hebes</i> <i>hebes</i> Jordan & Rothschild | ---; ---; 162, 256 | da Costa Lima & Hathaway | 1946 |
| <i>hebes</i> <i>septentrionalis</i> Wagner | ---; ---; 256 | da Costa Lima & Hathaway | 1946 |
| <i>lenis</i> Jordan & Rothschild | ---; ---; 35 | Popov & Akhundov | 1934 |
| | ---; ---; 162, 256 | Ioff | 1929 |
| | ---; ---; 256* | Pavlovskii | 1931 + |

TABLE 1 - PLEAS (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|-----------------------------|-------|
| <i>MESOPSYLLA</i> | | | |
| <i>tuschkan</i> | ---; ---; 162, 256 | Ioff | 1929 |
| Wagner & Ioff | ---; ---; 166, 294, 318, 326 | Pavlovskii | 1927 |
| | ---; ---; 345 | Wagner | 1938 |
| <i>MICROPSYLLOIDES</i> | | | |
| <i>jaonis</i> (Jordan) | ---; ---; 194 | da Costa Lima & Hathaway | 1946 |
| <i>MIOCTENOPSYLLA</i> | | | |
| <i>arotica</i> Rothschild | ---; ---; 256 | Jordan | 1932c |
| <i>MONOPSYLLUS</i> | | | |
| <i>anadyrus</i> Jordan | ---; ---; 256 | Jordan | 1937 |
| <i>anisus</i> (Rothschild) | ---; Dec.-July, Sept.-Nov.; 76 | Yang et al. | 1939 |
| | ---; rare; 77 | Chow & Huang | 1950 |
| | ---; capable of transmitting plague; 158 | Macchiavello | 1954 |
| | ---; capable of transmitting plague; 168* | Barnett & Toshioka | 1951 |
| | ---; ---; 194 | Liu | 1936 |
| <i>argus</i> (Rothschild) | ---; ---; 158 | Jameson | 1953 |
| <i>indages</i> (Rothschild) | ---; ---; 158 | Jameson | 1953 |
| <i>sciurorum</i> (Schrank) | ---; ---; 28, 35 | Wagner & Argyropulo | 1934 |
| <i>sciurorum</i> <i>asiaticus</i> Ioff | ---; ---; 31 | da Costa Lima & Hathaway | 1946 |
| | ---; ---; 326 | Wagner | 1938 |
| <i>sciurorum</i> <i>dryas</i> Wagner | ---; ---; 256 | da Costa Lima & Hathaway | 1946 |
| <i>sciurorum</i> <i>sciurorum</i> (Schrank) | ---; ---; 162, 256, 345 | da Costa Lima & Hathaway | 1946 |

TABLE 1 - FLEAS (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|-----------------------------|------|
| <i>MONOPSYLLUS</i> <i>tamias</i> (Wagner) | ---; ---; 256 | da Costa Lima & Hathaway | 1946 |
| <i>MYODOPSYLLA</i> <i>trisellis</i> Jordan | ---; ---; 194 | Hsiao | 1945 |
| <i>MYOXOPSYLLA</i> <i>jordani</i> Ioff & Argyropulo | ---; ---; 28, 256 | Ioff & Argyropulo | 1934 |
| <i>NEOCERATOPHYLLUS</i> <i>trispinosus</i> Liu | ---; ---; 76 | Hsiao | 1945 |
| <i>NEOCTENOPHTHALMUS</i> <i>dilatatus</i> (Wagner) | ---; ---; 256 | da Costa Lima & Hathaway | 1946 |
| <i>NEOPSYLLA</i> <i>aacanthina</i> Jordan & Rothschild | ---; ---; 256 | Jordan & Rothschild | 1923 |
| <i>aliena</i> Jordan & Rothschild | ---; ---; 76 | Hsiao | 1945 |
| <i>anoma</i> Rothschild | ---; ---; 76 | Hsiao | 1945 |
| <i>avida</i> Jordan | ---; ---; 144 | da Costa Lima & Hathaway | 1946 |
| <i>bidentatiformis</i> (Wagner) | ---; ---; 168 | Barnett & Toshioka | 1951 |
| | ---; ---; 194, 256, 353 | Wu | 1940 |
| <i>compar</i> Jordan & Rothschild | ---; ---; 76 | Hsiao | 1945 |
| <i>democratica</i> Wagner | ---; ---; 256 | da Costa Lima & Hathaway | 1946 |
| <i>dispar</i> Jordan | ---; ---; 59 | da Costa Lima & Hathaway | 1946 |

TABLE 1 - FLEAS (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|-----------------------------|-------|
| <i>NEOPSYLLA</i> | | | |
| <i>honora</i> Jordan | ---; ---; 76 | Hsiao | 1945 |
| <i>kopsteini</i> Jordan | ---; ---; 146 | Jordan | 1933 |
| <i>mana</i> Wagner | ---; ---; 256 | Wagner | 1927a |
| <i>meridiana</i> Tiflow & Kolpakova | ---; ---; 166 | da Costa Lima & Hathaway | 1946 |
| <i>pleskei</i> Ioff | ---; ---; 256 | Ioff & Argyropulo | 1934 |
| <i>pleskei</i> <i>armeniaca</i> Ioff & Argyropulo | ---; ---; 28, 35 | da Costa Lima & Hathaway | 1946 |
| <i>pleskei</i> <i>orientalis</i> Ioff & Argyropulo | ---; ---; 256 | da Costa Lima & Hathaway | 1946 |
| <i>pleskei</i> <i>pleskei</i> Ioff | ---; ---; 256 | da Costa Lima & Hathaway | 1946 |
| <i>pleskei</i> <i>rossica</i> Ioff & Argyropulo | ---; ---; 256 | da Costa Lima & Hathaway | 1946 |
| <i>secura</i> Rothschild | ---; ---; 143 | da Costa Lima & Hathaway | 1946 |
| <i>setosa</i> Wagner | ---; naturally infected with plague; 162° | Tikhonirova et al. | 1935 |
| | ---; experimental transmission of bubonic plague; 256 | Aristarkhova | 1930 |
| | ---; naturally infected with plague; 256 | Konovaiova | 1927 |
| | ---; ---; 294 | Pavlovskii | 1927 |
| | ---; ---; 321° | Boikiv | 1929 |
| | ---; ---; 343 | Ioff & Pokrovskaya | 1929 |

TABLE 1 - FLEAS (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|-----------------------------|-------|
| <i>NEOPSYLLA</i> | | | |
| <i>setcea</i> <i>hajastanica</i> Ioff & Argyropulo | ---; ---; 28 | Ioff & Argyropulo | 1934 |
| <i>setosa</i> <i>setosa</i> (Wagner) | ---; capable of transmitting plague; 256 | Macchiavello | 1954 |
| <i>sondaica</i> Jordan | ---; ---; 146 | da Costa Lima & Hathaway | 1946 |
| <i>specialis</i> Jordan | ---; ---; 76 | Hsiao | 1945 |
| <i>stevensi</i> Rothschild | ---; ---; 76, 143 | Hsiao | 1945 |
| <i>teratura</i> Rothschild | ---; ---; 162 | da Costa Lima & Hathaway | 1946 |
| | ---; ---; 256 | Sassuchin & Tiflow | 1936 |
| <i>tricata</i> Jordan | ---; ---; 144 | da Costa Lima & Hathaway | 1946 |
| <i>uniseriata</i> Wagner | ---; ---; 256 | Wagner | 1927a |
| <i>NESOLAGOBIOUS</i> | | | |
| <i>callosus</i> Jordan & Rothschild | ---; ---; 149 | da Costa Lima & Hathaway | 1946 |
| <i>NOSOPSYLLUS</i> | | | |
| <i>alladinis</i> (Rothschild) | ---; ---; 143 | da Costa Lima & Hathaway | 1946 |
| <i>arootus</i> (Jordan & Rothschild) | ---; ---; 143 | da Costa Lima & Hathaway | 1946 |
| <i>consimilis</i> (Wagner) | ---; ---; 28. ---; Jan.-Feb.; 35. ---; ---; 162,321 | Wagner & Argyropulo | 1934 |
| | ---; capable of transmitting plague; 256 | Macchiavello | 1954 |

TABLE 1 - FLEAS (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|---|-----------------------------|-------|
| <i>NOSOPSYLLUS</i> | | | |
| <i>fasoiatus</i> Bosc d'Antic | ---; near human dwellings; 35 | Wagner & Argyropulo | 1934 |
| | ---; ---; 76 | Wu | 1940 |
| | ---; in houses at high altitudes; 77 | Chow & Huang | 1950 |
| | ---; ---; 143 | Roy & Brown | 1954 |
| | ---; ---; 144 | Sorel | 1937 |
| | ---; ---; 158**, 168** | Jameson | 1953 |
| | ---; possible vector of plague; 168* | Barnett & Toshioka | 1951 |
| | ---; May; 168 | Hsiao | 1948 |
| | ---; ---; 256 | Anonymous | 1945a |
| <i>fidus</i> (Jordan & Rothschild) | ---; ---; 162 | da Costa Lima & Hathaway | 1946 |
| <i>henleyi</i> Rothschild | ---; ---; 345 | Argyropulo | 1936 |
| <i>iranus</i> Wagner & Argyropulo | ---; ---; 35 | Wagner & Argyropulo | 1934 |
| <i>laevioeps</i> Wagner | ---; ---; 35, 162 | Wagner & Argyropulo | 1934 |
| | ---; ---; 256, 345, 354 | Liu | 1936 |
| <i>laevioeps</i> <i>ellobii</i> Wagner | ---; ---; 353 | Liu | 1936 |
| <i>medus</i> Jordan | ---; ---; 151 | da Costa Lima & Hathaway | 1946 |
| <i>mokrneckyi</i> (Wagner) | ---; ---; 35, 256 | Wagner & Argyropulo | 1934 |
| | ---; capable of transmitting plague; 256 | Macchiavello | 1954 |
| | - -; ---; 345 | da Costa Lima & Hathaway | 1946 |

TABLE 1 - FLEAS (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|-----------------------------|------|
| <i>NOSOPSYLLUS</i> | | | |
| <i>nioanus</i> Jordan | ---; Dec.-May; 76 | Yang et al. | 1939 |
| <i>nilgeriensis</i> (Jordan & Rothschild) | ---; ---; 143 | Roy & Brown | 1954 |
| <i>punensis</i> (Jordan & Rothschild) | ---; ---; 143 | da Costa Lima & Hathaway | 1946 |
| <i>punjabensis</i> (Jordan & Rothschild) | ---; ---; 143 | Roy & Brown | 1954 |
| <i>sarinus</i> (Jordan & Rothschild) | ---; ---; 350 | da Costa Lima & Hathaway | 1946 |
| <i>simla</i> (Jordan & Rothschild) | ---; ---; 143 | Roy & Brown | 1954 |
| <i>sincerus</i> (Jordan & Rothschild) | ---; ---; 342 | da Costa Lima & Hathaway | 1946 |
| <i>tamilanus</i> (Jordan & Rothschild) | ---; ---; 70, 143 | Roy & Brown | 1954 |
| <i>wualis</i> Jordan | ---; ---; 76 | da Costa Lima & Hathaway | 1946 |
| <i>NYCTERIDOPSYLLA</i> | | | |
| <i>dictena</i> Kolenati | ---; ---; 256 | da Costa Lima & Hathaway | 1946 |
| <i>eusarca</i> Dampf | ---; ---; 256 | Wagner | 1927 |
| <i>galba</i> Dampf | ---; ---; 76 | Hsiao | 1945 |
| <i>longioeps</i> Rothschild | ---; ---; 256 | Wagner | 1927 |
| | ---; ---; 350 | da Costa Lima & Hathaway | 1946 |
| <i>pentaetena</i> Kolenati | ---; ---; 256 | Wagner | 1927 |

TABLE 1 - FLEAS (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|---|-----------------------------|--------|
| <i>OPHTHALMOPSYLLA</i> | | | |
| <i>arnoldi</i> Wagner & Argyropulo | ---; ---; 35 | Wagner & Argyropulo | 1934 |
| <i>jettmari</i> Jordan | ---; ---; 76 | da Costa Lima & Hathaway | 1946 |
| | ---; sand dunes; 194 | Liu | 1936 |
| <i>kasakiensis</i> Ioff | ---; ---; 162 | Ioff | 1929 |
| | ---; ---; 256 | da Costa Lima & Hathaway | 1946 |
| <i>kiritschenkoi</i> Wagner | ---; ---; 210 | Wu | 1940 |
| | ---; ---; 353 | Hsiao | 1945 |
| <i>kukushkini</i> Ioff | ---; ---; 76 | da Costa Lima & Hathaway | 1946 |
| | ---; sand dunes; 194. ---; ---; 256 | Liu | 1936 |
| <i>praefecta</i> Jordan & Rothschild | ---; ---; 162, 166, 256, 294, 318, 326 | Pavlovskii | 1927 |
| <i>praefecta</i> <i>pernix</i> Jordan | ---; ---; 162, 256 | Wu | 1940 |
| | ---; ---; 209 | Liu | 1936 |
| | ---; ---; 353 | Hsiao | 1945 |
| <i>praefecta</i> <i>praefecta</i> (Jordan & Rothschild) | ---; ---; 162, 256 | da Costa Lima & Hathaway | 1946 |
| <i>volgensis</i> Wagner & Ioff | ---; ---; 35 | Wagner | 1935 |
| | ---; ---; 162, 166, 256, 294, 318, 326 | Pavlovskii | 1927 |
| | ---; ---; 256* | Pavlovskii | 1931 + |
| | ---; ---; 345 | Ioff | 1928a |
| | ---; ---; 354 | Nikanorov & Knyazevskii | 1927 |
| <i>OROPSYLLA</i> | | | |
| <i>elana</i> Jordan | ---; ---; 194 | Hsiao | 1945 |

TABLE 1 - FLEAS (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|-----------------------------|--------|
| <i>OROPSYLLA</i> | | | |
| <i>ilovaiskii</i> Wagner & Ioff | ---; ---; 162, 256 | Ioff | 1928a |
| | ---; ---; 256* | Pavlovskii | 1931 + |
| | ---; steppes; 294 | Pavlovskii | 1927 |
| <i>mandarina</i> (Jordan & Rothschild) | ---; ---; 76 | da Costa Lima & Hathaway | 1946 |
| <i>montana</i> (Baker) | ---; ---; 76 | da Costa Lima & Hathaway | 1946 |
| <i>segregata</i> (Wagner) | ---; ---; 256 | Wagner | 1938 |
| | ---; ---; 303 | da Costa Lima & Hathaway | 1946 |
| <i>silantiewi</i> Wagner | ---; ---; 162, 194, 256, 354 | Wagner | 1936 |
| | ---; ---; 256* | Golov & Ioff | 1928 |
| | ---; ---; 294 | Pavlovskii | 1927 |
| | ---; capable of transmitting plague; 353 | Macchiavelle | 1954 |
| <i>silantiewi</i> <i>asiatica</i> Wagner | ---; ---; 256 | Wagner | 1936 |
| <i>silantiewi</i> <i>crassa</i> (Jordan & Rothschild) | ---; ---; 76 | Hsiao | 1945 |
| | ---; ---; 194 | da Costa Lima & Hathaway | 1946 |
| <i>silantiewi</i> <i>silantiewi</i> (Wagner) | ---; ---; 31 | Liu | 1936 |
| | ---; ---; 162 | da Costa Lima & Hathaway | 1946 |
| | ---; ---; 194, 256, 353 | Wu | 1940 |
| <i>silantiewi</i> <i>weisskai</i> Wagner | ---; ---; 353 | Wagner | 1936 |
| <i>sinensis</i> Liu | ---; ---; 76 | Liu | 1936 |
| <i>stejnegeri</i> Jordan | ---; ---; 256 | Jordan | 1937 |

TABLE 1 - FLEAS (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|-----------------------------|-------|
| <i>PALAEOPSYLLA</i> | | | |
| <i>gracilis</i> Dampf | ---; ---; 294 | Pavlovskii | 1927 |
| <i>incurva</i> Jordan | ---; ---; 59 | da Costa Lima & Hathaway | 1946 |
| <i>klebsiana</i> Dampf | ---; ---; 294 | Pavlovskii | 1927 |
| <i>laxata</i> Jordan | ---; ---; 146 | Jordan | 1933 |
| <i>minor</i> Dale | ---; ---; 256 | Wagner | 1927 |
| <i>remota</i> Jordan | ---; ---; 76 | Heiao | 1945 |
| | ---; ---; 143 | Jordan | 1932a |
| <i>similis</i> Dampf | ---; ---; 256 | da Costa Lima & Hathaway | 1946 |
| <i>sorecis</i> <i>starki</i> Wagner | ---; ---; 256 | da Costa Lima & Hathaway | 1946 |
| <i>starki</i> Wagner | ---; ---; 256 | Ioff & Tiflow | 1932 |
| <i>PALAOCTENOPHTHALMUS</i> | | | |
| <i>acuminatus</i> (Ioff & Argyropulo) | ---; ---; 28, 345 | da Costa Lima & Hathaway | 1946 |
| <i>fissura</i> (Wagner) | ---; ---; 28, 345 | da Costa Lima & Hathaway | 1946 |
| <i>inornatus</i> (Wagner) | ---; ---; 345 | da Costa Lima & Hathaway | 1946 |
| <i>PARACALLOPSYLLA</i> | | | |
| <i>karnakovi</i> (Wagner) | ---; ---; 76 | da Costa Lima & Hathaway | 1946 |
| <i>oreina</i> (Jordan) | ---; ---; 143, 235 | da Costa Lima & Hathaway | 1946 |
| <i>PARACERAS</i> | | | |
| <i>crispus</i> (Jordan & Rothschild) | ---; ---; 76, 256 | da Costa Lima & Hathaway | 1946 |
| <i>flabellum</i> Wagner | ---; ---; 162, 256 | da Costa Lima & Hathaway | 1946 |

TABLE 1 - FLEAS (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|---|-----------------------------|-------|
| <i>PARACERAS</i> | | | |
| <i>homatus</i> Jordan | ---; ---; 59, 76 | da Costa Lima & Hathaway | 1946 |
| <i>javanicus</i> (Ewing) | ---; ---; 146 | Jordan | 1937 |
| <i>melis</i> (Curtis) | ---; ---; 35 | Wagner & Argyropulo | 1934 |
| | ---; ---; 158, 345 | da Costa Lima & Hathaway | 1946 |
| <i>pendleburyi</i> Jordan | ---; ---; 145 | da Costa Lima & Hathaway | 1946 |
| <i>sauteri</i> (Rothschild) | ---; ---; 77 | Chow & Huang | 1950 |
| <i>segregatus</i> Wagner | ---; ---; 303 | Wagner | 1930a |
| <i>sinensis</i> (Liu) | ---; ---; 76 | Hsiao | 1945 |
| <i>PARADOXOPSYLLUS</i> | | | |
| <i>conveniens</i> Wagner | ---; ---; 210 | Wagner | 1930 |
| | ---; ---; 353 | Hsiao | 1945 |
| <i>curvispinus</i> Miyajima & Koidzumi | ---; ---; 76, 158, 162 | Wu | 1940 |
| | ---; ---; 168 | Barnett & Toshioka | 1951 |
| <i>custodio</i> Jordan | ---; ---; 76 | Hsiao | 1945 |
| <i>naryni</i> Wagner | ---; ---; 294 | da Costa Lima & Hathaway | 1946 |
| <i>repandus</i> (Rothschild) | ---; ---; 162 | da Costa Lima & Hathaway | 1946 |
| | ---; ---; 256 | Sassuchin et al. | 1935 |
| <i>teretifrons</i> (Rothschild) | ---; ---; 162 | da Costa Lima & Hathaway | 1946 |
| | ---; ---; 256 | Sassuchin et al. | 1935 |

TABLE 1 - FLEAS (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|-----------------------------|--------|
| <i>PARADOXOPSYLLA</i> <i>transbaikalicus</i> Tiflow & Pavlov | ---; ---; 256 | da Costa Lima & Hathaway | 1946 |
| <i>PARANEOPSYLLA</i> <i>loffii</i> Tiflow | ---; ---; 162 | da Costa Lima & Hathaway | 1946 |
| <i>PARIODONTIS</i> <i>riggenbachii</i> (Rothschild) | ---; ---; 143 | Sharif | 1930 |
| <i>subjugis</i> Jordan | ---; ---; 190 | da Costa Lima & Hathaway | 1946 |
| <i>wernecki</i> da Costa Lima | ---; ---; 143 | da Costa Lima & Hathaway | 1946 |
| <i>PECTINOCTENUS</i> <i>adalis</i> Jordan | ---; ---; 76, 194 | da Costa Lima & Hathaway | 1946 |
| <i>otenophorus</i> Wagner | ---; ---; 162 | Wagner | 1929 + |
| | ---; ---; 210 | Wu | 1940 |
| | ---; ---; 294 | da Costa Lima & Hathaway | 1946 |
| <i>lautus</i> (Rothschild) | ---; ---; 162 | da Costa Lima & Hathaway | 1946 |
| | ---; ---; 256 | Sassuchin & Tiflow | 1936 |
| <i>numerosus</i> Tiflow | ---; ---; 162 | da Costa Lima & Hathaway | 1946 |
| <i>pavlovskii</i> (Ioff) | ---; ---; 256 | da Costa Lima & Hathaway | 1946 |
| <i>pectiniops</i> Wagner | ---; ---; 256 | da Costa Lima & Hathaway | 1946 |
| <i>PECTINOTECTUS</i> <i>adalis</i> Jordan | ---; ---; 194 | Neisao | 1945 |
| <i>PULEX</i> <i>canis</i> (Curtis) | ---; sometimes in swamps in sandy places; 144 | Cadet | 1917 |

TABLE 1 - FLEAS (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---------------------------------|---|------------------------|------|
| <i>PULEX</i> | | | |
| <i>cheopis</i> (Rothschild) | ---; May, in houses; 144* | Cadet | 1917 |
| | ---; naturally infected with plague; 242 | Heiser | 1914 |
| <i>globioeps</i> Taschenberg | ---; ---; 256 | Baker | 1895 |
| <i>hyaenas</i> Kolen | ---; ---; 345 | Jordan & Rothschild | 1920 |
| <i>irritans</i> Linnaeus | ---; ---; 59, 235. ---; mostly in hilly regions, enters houses; 143 | Sharif | 1930 |
| | ---; plays a role in the transmission of typhus; 76 | Liu | 1944 |
| | ---; May-June; 76° | Rothschild | 1914 |
| | ---; common in plains and mountains; 77° | Chow & Huang | 1950 |
| | ---; ---; 77 | Omori | 1935 |
| | ---; ---; 133 | Landauer | 1938 |
| | ---; only in hills; 143 | Patton | 1922 |
| | ---; common; 143 | King et al. | 1931 |
| | ---; ---; 143° | Iyengar | 1934 |
| | ---; on beach, attracted by light, not very common; 144 | Cadet | 1917 |
| | ---; seldom found on man; 146°. ---; ---; 150° | Kopstein | 1931 |
| | ---; ---; 150, 345 | Wagner | 1916 |
| | ---; vicinity of huts and villages; 151° | Patton | 1920 |
| | ---; July; 154°, 342° | Buxton | 1924 |
| | ---; ---; 158*°, 168*° | Jameson | 1953 |
| | ---; ---; 159 | Jordan | 1937 |
| | ---; naturally infected with plague; 162° | Tikhomirova | 1934 |
| | ---; ---; 162 | Kalina | 1931 |
| | ---; in houses, 168 | Barnett & Toshioka | 1951 |

TABLE 1 - FLEAS (continued)

| SPECIES | BREEDING HABITATS, ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|-----------------------------|-------|
| <i>PULEX</i> | | | |
| <i>irritans</i> | ---; ---; 174, 302 | Anonymous | 1944c |
| Linnaeus (cont.) | ---; ---; 194° | Hsiao | 1946 |
| | ---; ---; 194 | Anonymous | 1946 |
| | ---; ---; 242 | Banks | 1919 |
| | ---; experimentally infected with plague; 256 | Golov & Ioff | 1925 |
| | ---; ---; 256° | Ioff | 1925 |
| | ---; ---; 280 | Gilmour | 1934 |
| | ---; ---; 317 | Monziols & Collignon | 1920 |
| | ---; ---; 321° | Makarov | 1928 |
| | ---; ---; 326 | Khodukin | 1928 |
| | ---; ---; 342 | Anonymous | 1944b |
| <i>irritans</i> <i>fulvus</i> Ioff | ---; ---; 256 | da Costa Lima & Hathaway | 1946 |
| <i>jaoulans</i> Motschulsky | ---; ---; 256 | da Costa Lima & Hathaway | 1946 |
| <i>orientalis</i> Kishida | ---; ---; 76 | Hsiao | 1946 |
| <i>PYGIOPSYLLA</i> | | | |
| <i>ahalae</i> Rothschild | ---; experimental infection and transmittal of pest; 146 | Schwellengrabel & Otten | 1914 |
| <i>celebensis</i> Ewing | ---; ---; 145 | da Costa Lima & Hathaway | 1946 |
| <i>jaobsoni</i> Jordan & Rothschild | ---; ---; 149 | Jordan & Rothschild | 1922c |
| <i>klossi</i> Jordan & Rothschild | ---; ---; 144 | Jordan & Rothschild | 1922a |
| <i>robisoni</i> Rothschild | ---; ---; 143 | Jordan & Rothschild | 1922c |

TABLE 1 - FLEAS (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|-----------------------------|-------|
| <i>PYGIOPSYLLA</i> | | | |
| <i>sciuri</i> Ewing | ---; ---; 145 | da Costa Lima & Hathaway | 1946 |
| <i>synetus</i> Jordan & Rothschild | ---; ---; 149 | Jordan & Rothschild | 1922c |
| <i>RECTOPONTIA</i> | | | |
| <i>acoola</i> (Wagner) | ---; ---; 76 | Wu | 1940 |
| <i>altaica</i> (Wagner) | ---; ---; 31 | Wu | 1940 |
| | ---; ---; 256 | da Costa Lima & Hathaway | 1946 |
| <i>angusta</i> (Tiflow) | ---; ---; 162 | da Costa Lima & Hathaway | 1946 |
| <i>oasta</i> (Jordan) | ---; ---; 35 | Wagner & Argyropulo | 1934 |
| | ---; ---; 345 | da Costa Lima & Hathaway | 1946 |
| <i>dahurica</i> (Jordan & Rothschild) | ---; ---; 194, 256 | Hsiao | 1945 |
| <i>dives</i> (Jordan) | ---; ---; 194 | Wu | 1940 |
| <i>insolita</i> (Jordan) | ---; ---; 194 | Hsiao | 1945 |
| <i>jaonts</i> (Jordan) | ---; ---; 76, 194 | Wu | 1940 |
| <i>rothschildi</i> (Tiflow & Pavlov) | ---; ---; 256 | da Costa Lima & Hathaway | 1946 |
| <i>tenella</i> (Jordan) | ---; ---; 194 | Hsiao | 1945 |
| <i>vicina</i> (Wagner) | ---; ---; 76 | Wu | 1940 |
| <i>RHADINOPSYLLA</i> | | | |
| <i>acoola</i> Wagner | ---; ---; 76 | Wagner | 1930 |

TABLE 1 - FLEAS (continued)

| SPECIES | BREEDING HABITATS: ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|-----------------------------|--------|
| <i>RHADINOPSYLLA</i> | | | |
| <i>bivirgis</i> Rothschild | ---; ---; 162 | da Costa Lima & Hathaway | 1946 |
| | ---; ---; 256 | Pavlovskii | 1927 |
| <i>casta</i> Jordan | ---; ---; 345 | Argyropulo | 1937 |
| <i>cedestis</i> Rothschild | ---; ---; 162 | da Costa Lima & Hathaway | 1946 |
| | ---; ---; 256 | Sassuchin et al. | 1935 |
| | ---; ---; 318 | Vlasov | 1932 |
| | ---; ---; 354 | Nikancrov & Knyazevskii | 1927 |
| <i>dahurica</i> Jordan & Rothschild | ---; ---; 256 | Jordan & Rothschild | 1923 |
| <i>diolinica</i> Tiflow | ---; ---; 162 | da Costa Lima & Hathaway | 1946 |
| <i>divas</i> (Jordan) | ---; ---; 194 | Jordan | 1929a |
| <i>insolita</i> Jordan | ---; ---; 168 | Jameson | 1953 |
| | ---; ---; 194 | Jordan | 1929a |
| <i>ioffi</i> Wagner | ---; ---; 162 | Wagner | 1930 |
| <i>jaonis</i> Jordan | ---; ---; 194 | Jordan | 1929a |
| <i>rothschildi</i> Ioff | ---; ---; 256 | Ioff | 1940 |
| <i>soria</i> Wagner | ---; ---; 162 | da Costa Lima & Hathaway | 1946 |
| <i>tenella</i> Jordan | ---; ---; 194 | Jordan | 1929a |
| <i>ucronica</i> Wagner & Argyropulo | ---; ---; 118 | Argyropulo & Yevranov | 1937 + |

TABLE 1 - FLEAS (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|---|-----------------------------|-------|
| <i>RHADINOPSYLLA</i> | | | |
| <i>ukrainica</i> Ioff | ---; ---; 28, 35, 256, 321 | Ioff | 1940 |
| | ---; ---; 162 | Wagner & Argyropulo | 1934 |
| <i>valenti</i> Darskaya | ---; ---; 168 | Jameason | 1953 |
| <i>vicina</i> Wagner | ---; ---; 76 | Wagner | 1930 |
| <i>RHIONOLPHOPSYLLA</i> | | | |
| <i>unipectinata</i> (Taschenberg) | ---; ---; 35 | Wagner & Argyropulo | 1934 |
| <i>unipectinata</i> <i>indica</i> Jordan & Rothschild | ---; ---; 143 | Jordan & Rothschild | 1921a |
| <i>ROSTROPSYLLA</i> | | | |
| <i>dacus</i> (Jordan & Rothschild) | ---; ---; 162, 166, 318, 326 | Pavlovskii | 1927 |
| | ---; ---; 345 | da Costa Lima & Hathaway | 1946 |
| <i>SPALACOTENOPH-</i> <i>THALMUS</i> | | | |
| <i>gigantospalacia</i> (Ioff) | ---; ---; 345 | da Costa Lima & Hathaway | 1946 |
| <i>typhlus</i> (Motschulsky) | ---; ---; 256 | da Costa Lima & Hathaway | 1946 |
| <i>STENISCHIA</i> | | | |
| <i>mirabilis</i> Jordan | ---; ---; 76 | Wu | 1940 |
| <i>STENOPONIA</i> | | | |
| <i>coelestis</i> Jordan & Rothschild | ---; ---; 76 | Wu | 1940 |
| <i>conspicua</i> Wagner | ---; ---; 162 | Wagner | 1926 |
| | ---; ---; 256 | Sassuchin et al. | 1935 |
| | ---; ---; 318 | Vlasov | 1932 |

TABLE 1 - FLEAS (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---------------------------------------|---|-----------------------------|------|
| <i>STENOPONIA</i> | | | |
| <i>formosovi</i> Ioff & Tiflow | ---; ---; 256 | Ioff & Tiflow | 1934 |
| <i>insperata</i> Weiss | ---; ---; 35 | Wagner & Argyropulo | 1934 |
| | ---; ---; 345 | Argyropulo | 1936 |
| <i>ivanovi</i> Ioff & Tiflow | ---; ---; 162, 256, 345 | da Costa Lima & Hathaway | 1946 |
| <i>lasovi</i> Ioff & Tiflow | ---; ---; 318 | da Costa Lima & Hathaway | 1946 |
| <i>montana</i> Darakaya | ---; ---; 168 | Jameson | 1953 |
| <i>sidimi</i> Marikovskiy | ---; ---; 158, 168 | Jameson | 1953 |
| | ---; ---; 256 | da Costa Lima & Hathaway | 1946 |
| <i>singularis</i> Ioff & Tiflow | ---; ---; 256 | Ioff & Tiflow | 1934 |
| <i>solitaria</i> Ioff & Tiflow | ---; ---; 31 | da Costa Lima & Hathaway | 1946 |
| | ---; ---; 162 | Wagner | 1935 |
| | ---; ---; 256 | Sassuchin et al. | 1935 |
| | ---; March; 293 | Ioff & Tiflow | 1934 |
| <i>suknevi</i> Ioff & Tiflow | ---; ---; 31, 162 | Ioff & Tiflow | 1934 |
| | ---; ---; 256 | da Costa Lima & Hathaway | 1946 |
| | ---; ---; 318 | Wagner | 1935 |
| <i>tripestinata</i> Tiraboschi | ---; ---; 342, 350 | Ioff & Tiflow | 1934 |

TABLE 1 - FLEAS (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|---|-----------------------|
| <i>STENOPONIA</i> <i>vlasovi</i> Ioff & Tiflow | ---; Feb.-March and Nov.; 318 | Ioff & Tiflow | 1934 |
| <i>STIVALIUS</i> <i>ahalae</i> (Rothschild) | ---; enters houses; 143° ---; ---; 143 | Iyengar Jordan & Rothschild | 1934 1922b |
| <i>aporus</i> Jordan & Rothschild | ---; ---; 70, 143 | Jordan & Rothschild | 1922b |
| <i>cognatus</i> Jordan & Rothschild | ---; in mountainous country 800 meters and higher, indoors; 146 | Kopsch | 1931 |
| <i>ferinus</i> (Rothschild) | ---; ---; 70, 143 | Jordan & Rothschild | 1922b |
| <i>jacobsoni</i> (Jordan & Rothschild) | ---; ---; 146, 149 | Jordan | 1933 |
| <i>javanus</i> Jordan | ---; ---; 146 | Jordan | 1933 |
| <i>klossi</i> (Jordan & Rothschild) | ---; ---; 144 ---; ---; 146 ---; ---; 149 | Jordan & Rothschild Jordan da Costa Lima & Hathaway | 1922b 1933 1946 |
| <i>loncius</i> Jordan | ---; ---; 145 | da Costa Lima & Hathaway | 1946 |
| <i>mjöbergi</i> Jordan | ---; at high altitudes; 145 | Jordan & Rothschild | 1926 |
| <i>phoberus</i> Jordan & Rothschild | ---; ---; 70 | Thompson | 1938 |
| <i>pomerantzi</i> Traub | ---; ---; 242 | Traub | 1951 |
| <i>ralius</i> Traub | ---; ---; 242 | Traub | 1951 |

TABLE 1 - FLEAS

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|-----------------------------|-------|
| <i>STIVALIUS</i> | | | |
| <i>rhaebus</i> Jordan | ---; at high altitudes; 145 | Jordan & Rothschild | 1926 |
| <i>robinsoni</i> (Rothschild) | ---; ---; 146, 149, 190 | Jordan & Rothschild | 1922b |
| | ---; ---; 242 | Traub | 1951 |
| <i>spiramus</i> Jordan | ---; ---; 242 | da Costa Lima & Hathaway | 1946 |
| <i>synetus</i> Jordan & Rothschild | ---; ---; 149 | Jordan & Rothschild | 1922b |
| <i>SYNOSTERNUS</i> | | | |
| <i>cleopatrae</i> Rothschild | ---; ---; 342 | da Costa Lima & Hathaway | 1946 |
| <i>longispinus</i> (Wagner) | ---; ---; 162, 354 | da Costa Lima & Hathaway | 1946 |
| | ---; ---; 166, 318, 326 | Pavlovskii | 1927 |
| <i>pallidus</i> (Taschenberg) | ---; ---; 143, 151, 354 | Sharif | 1930 |
| | ---; ---; 256 | Sassuchin et al. | 1935 |
| | ---; ---; 318 | Vlasov | 1932 |
| <i>pallidus</i> <i>pallidus</i> (Taschenberg) | ---; ---; 143, 151, 354 | da Costa Lima & Hathaway | 1946 |
| <i>TARSOPSYLLA</i> | | | |
| <i>octodecimdentata</i> (Kolenati) | ---; ---; 256 | da Costa Lima & Hathaway | 1946 |
| <i>THAUMAPSYLLA</i> | | | |
| <i>breviceps</i> Rothschild | ---; ---; 70, 242 | da Costa Lima & Hathaway | 1946 |
| | ---; ---; 146, 190, 277 | Traub | 1951 |
| <i>longiforceps</i> Traub | ---; ---; 145, 146, 242 | Traub | 1951 |
| <i>TRICHOPSYLLA</i> | | | |
| <i>advenaria</i> (Wagner) | ---; ---; 256 | da Costa Lima & Hathaway | 1946 |

TABLE 1 - FLEAS (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|--------------------------------------|--------------|
| <i>TRICHOPSYLLA</i> | | | |
| <i>andrya</i> (Jordan) | ---; ---; 256 | da Costa Lima & Hathaway | 1946 |
| <i>appropinquans</i> Wagner | ---; ---; 256 | Wagner | 1930 |
| <i>calcarifer</i> (Wagner) | ---; ---; 256 | da Costa Lima & Hathaway | 1946 |
| <i>globiceps</i> Taschenberg | ---; ---; 294 | Pavlovskii | 1927 |
| <i>homoeus</i> <i>carenis</i> Jordan | ---; ---; 59 | Jordan | 1932a |
| <i>pencilliger</i> <i>pencilliger</i> (Grube) | ---; ---; 158, 256, 354 | da Costa Lima & Hathaway | 1946 |
| <i>rectangulata</i> (Wahlgren) | ---; ---; 256 | da Costa Lima & Hathaway | 1946 |
| <i>toli</i> (Wagner) | ---; ---; 256 | da Costa Lima & Hathaway | 1946 |
| <i>trichosa</i> Kobaut | ---; ---; 294 | Pavlovskii | 1927 |
| <i>turbida</i> (Rothschild) | ---; ---; 256 | da Costa Lima & Hathaway | 1946 |
| <i>walkeri</i> (Rothschild) | ---; ---; 256 | da Costa Lima & Hathaway | 1946 |
| <i>TUNGA</i> | | | |
| <i>caecigena</i> Jordan & Rothschild | ---; ---; 76 ---; ---; 158 | Riley Jameson | 1932 1953 |
| <i>lagrangei</i> Roubaud | ---; ---; 76 | Patton | 1926 |
| <i>penetrans</i> (Linnaeus) | ---; ---; 76 ---; ---; 143 (Attacks man) | da Costa Lima & Hathaway Riley | 1946 1932 |
| <i>TYPHLOPSYLLA</i> | | | |
| <i>caucastica</i> Taschenberg | ---; ---; 345 | Baker | 1895 |

TABLE 1 - FLEAS (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|---|-----------------------------|-------|
| <i>TYPHLOCALLOPSYLLA</i> | | | |
| <i>semenovi</i> (Ioff) | ---; ---; 256 | da Costa Lima & Hathaway | 1946 |
| <i>VERMIPSYLLA</i> | | | |
| <i>alacurt</i> Schimkewitsch | ---; ---; 162, 353 | Pavlovskii | 1927 |
| <i>dorcadia</i> Rothschild | ---; ---; 76 | Wu | 1940 |
| <i>hyasmae</i> Kolenati | ---; ---; 345 | Wagner | 1916 |
| <i>WAGNERINA</i> | | | |
| <i>shelkounikovi</i> Ioff & Argyropulo | ---; indoors; 28 | Ioff & Argyropulo | 1934 |
| <i>XENODAERIA</i> | | | |
| <i>telios</i> Jordan | ---; ---; 143 | Jordan | 1932a |
| <i>XENOPSYLLA</i> | | | |
| <i>astia</i> Rothschild | ---; ---; 25, 151, 280 | Sharif | 1930 |
| | ---; ---; 59* | Wilcocks | 1944 |
| | ---; carrier of plague, Dec.-Jan., sharp rise in June; 70° | Philip & Hirst | 1917 |
| | ---; experimental transmission of plague; 70, 143 | Goyle | 1928 |
| | ---; Feb.; 70 | Leeson | 1932 |
| | ---; ---; 70* | Cragg | 1920 |
| | ---; ---; 76 | Patton | 1926 |
| | ---; potential carrier of plague, Jul.-Oct., peak March-June; 143 | Strickland & Roy | 1930 |
| | ---; vector capacity for plague, peak Sept.-Oct.; 143 | Walker et al. | 1931 |
| | ---; experimentally infected with plague; 143 | Webster & Chitre | 1930 |
| | ---; experimental infection of <i>Pasteurella pestis</i> ; 143 | Webster & Chitre | 1930b |

TABLE 1 - FLEAS (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---------------------|--|--------------------------|-------|
| <i>XENOPSYLLA</i> | | | |
| <i>astia</i> | ---; enters houses; Jan., July-Aug.; 143 | King et al. | 1931 |
| Rothschild | --- | | |
| (cont.) | ---; near houses, Sept.-Dec.; 143* | King & Iyer | 1933 |
| | ---; Oct.- March; 143 | Taylor & Chitre | 1923 |
| | ---; all year; 143 | Webster & Chitre | 1930a |
| | ---; in huts, March-Apr.; 143 | Iyer | 1933 |
| | ---; ---; 143* | George & Timothy | 1941 |
| | ---; ---; 144* | Herivaux & Toumanoff | 1948a |
| | ---; ---; 145, 146*, 235 | Kopstein | 1931 |
| | ---; ---; 302 | da Costa Lima & Hathaway | 1946 |
| <i>brasiliensis</i> | ---; ---; 70 | Thompson | 1937 |
| (Baker) | ---; ---; 76 | Patton | 1926 |
| | ---; experimental transmission of plague, experimentally infected with <i>Pasteurella pestis</i> ; 143 | Webster & Chitre | 1930b |
| | ---; abundant in houses, March-Apr.; 143 | Iyer | 1933 |
| | ---; ---; 143* | George & Timothy | 1941 |
| | ---; March-May, Aug.-Sept., Nov.; 143 | Webster & Chitre | 1930a |
| | ---; Jan.-March, Oct.; 143 | Taylor & Chitre | 1923 |
| | ---; near houses; 143* | King & Iyer | 1933 |
| | ---; ---; 235 | Sharif | 1930 |
| <i>ohsopsis</i> | ---; ---; 31*, 76* | Wu | 1940 |
| (Rothschild) | ---; ---; 31, 151 | Sharif | 1930 |

TABLE 1 - FLEAS (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|--|------------------------|-------|
| <i>XENOPSYLLA</i> <i>chaopis</i> (Rothschild) (cont.) | ---; in houses; 35 | Wagner & Argyropulo | 1935 |
| | ---; carrier of plague; 59 | Wilcocks | 1944 |
| | ---; Feb.; 70 | Leeson | 1932 |
| | ---; ---; 70* | Hirst | 1933 |
| | ---; common, principal vector of plague and murine typhus; 76** | Ke et al. | 1948 |
| | ---; common carrier of bubonic plague bacillus; 76 | Patton | 1926 |
| | ---; naturally infected with typhus rickettsiae; 76 | Liu | 1947 |
| | ---; all year, possible vector of plague; 76 | Yang et al. | 1939 |
| | ---; Feb.-Sept.; 76 | Liu | 1944 |
| | ---; May-June; 76 | Rothschild | 1914 |
| | ---; Aug.-Sept.; 118 | Stepanov | 1931 |
| | ---; enters houses; 118 | Ioff | 1928a |
| | ---; ---; 133 | Landauer | 1938 |
| | ---; ---; 139** | Hsiao | 1945 |
| | ---; experimental transmission of plague, experimentally infected with <i>Pasteurella pestis</i> ; 143 | Webster & Chitre | 1930b |
| | ---; hot and damp coastal zone; 143. ---; ---; 145, 350. ---; high in the mountains, indoors; 146° | Kopstein | 1931 |
| | ---; suspected vector of typhus, all year, peak Sept.-Oct.; 143 | Mehta | 1937 |
| | ---; experimental transmission of typhus strain, Aug.; 143 | Covell & Mehta | 1936 |
| | ---; enters houses, rare, Sept.-Oct.; 143 | King et al. | 1931 |
| | ---; peak July-Oct., Nov.-Feb.; 143 | Strickland & Roy | 1940 |
| | ---; Oct.- March; 143 | Taylor & Chitre | 1923 |

TABLE 1 - FLEAS (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|-------------------|--|--------------------------|--------|
| <i>XENOPSYLLA</i> | | | |
| <i>cheopis</i> | ---; near houses, Nov.-Dec.; 143° | King & Iyer | 1933 |
| (Rothschild) | ---; ---; 143* | Cragg | 1920 |
| (cont.) | ---; frequents houses; 144** | Wilcocks | 1944a |
| | ---; most active Feb.-May; 144 | Herivaux & Toumanoff | 1948 |
| | ---; experimental infection and transmission of pest; 146 | Schwellengrabel & Otten | 1914 |
| | ---; ---; 149, 150, 242 | da Costa Lima & Hathaway | 1946 |
| | ---; July, Sept.; 154. ---; Sept.-Oct., principal vector of <i>Pasteurella pestis</i> ; 342* | Buxton | 1924 |
| | ---; ---; 158** | Jameson | 1953 |
| | ---; ---; 162 | Povpov & Akhundov | 1934 |
| | ---; readily attacks man, most important vector of plague and murine typhus; 168*** | Barnett & Toshioka | 1951 |
| | ---; all year, peak Aug.-Sept.; 168 | Hsiao | 1948 |
| | ---; ---; 174, 302 | Anonymous | 1944c |
| | ---; experimentally infected with urban typhus, suspected vector of urban typhus; 190 | Lewthwaite et al. | 1935 |
| | ---; experimental transmission of tropical typhus; 190 | Kingsbury | 1936 |
| | ---; vector of plague and murine typhus; 194*** | Hsiao | 1946 |
| | ---; ---; 235 | Sinton | 1925 |
| | ---; ---; 242* | Banks | 1919 + |
| | ---; active Jan., March-May, July-Dec.; 256 | Pokrovski | 1931 |
| | ---; ---; 256° | Pavlovskii | 1931 + |
| | ---; ---; 280 | Gilmour | 1934 |

TABLE 1 - FLEAS (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--------------------------------|---|-----------------------------|--------|
| <i>XENOPSYLLA</i> | | | |
| <i>cheopis</i> (Rothschild) | ---; ---; 317* | Anonymous | 1944 |
| (cont.) | ---; Aug.-Sept.; 321 | Roshkovskaya | 1937 |
| | ---; ---; 337* | Farner | 1943 |
| | ---; ---; 342 (Connected with bubonic plague) | Anonymous | 1944b |
| <i>conformis</i> Wagner | ---; ---; 35 | Wagner & Argyropulo | 1934 |
| | ---; ---; 150, 162, 345, 354 | da Costa Lima & Hathaway | 1946 |
| | ---; ---; 166, 318, 326 | Pavlovskii | 1927 |
| | ---; ---; 256 | Sassuchin et al. | 1935 |
| <i>gerbilli</i> (Wagner) | ---; ---; 162, 166, 318, 326 | Pavlovskii | 1927 |
| | ---; ---; 256 | Sassuchin et al. | 1935 |
| | ---; ---; 354 | da Costa Lima & Hathaway | 1946 |
| <i>hirtipes</i> Rothschild | ---; ---; 162, 326 | Ioff | 1928a |
| | ---; ---; 256 | Sassuchin et al. | 1935 |
| <i>hussaini</i> Sharif | ---; ---; 143 | Sharif | 1930 |
| <i>magdalinæ</i> Ioff | ---; ---; 162 | da Costa Lima & Hathaway | 1946 |
| | ---; ---; 256 | Ioff | 1935 |
| <i>minax</i> Jordan | ---; ---; 162 | da Costa Lima & Hathaway | 1946 |
| | ---; ---; 256 | Sassuchin et al. | 1935 |
| <i>mycerini</i> Rothschild | ---; ---; 162 | Ioff | 1928a |
| | ---; experimental : transmission of plague; 256 | Nikanoroff | 1929 |
| | ---; ---; 256* | Pavlovskii | 1931 + |

TABLE 1 - FLEAS (concluded)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|---|-------------------------------|--------|
| <i>XENCPSYLLA</i> | | | |
| <i>nesiotus</i> (Jordan & Rothschild) | ---; ---; 146 | da Costa Lima & Hathaway | 1946 |
| | ---; ---; 149 | Kopstein | 1931 |
| <i>nubia</i> Rothschild | ---; ---; 302, 342 | da Costa Lima & Hathaway | 1946 |
| <i>nutalli</i> Ioff | ---; ---; 31 | da Costa Lima & Hathaway | 1946 |
| | ---; ---; 256 | Sassuchin et al. | 1935 |
| <i>romensis</i> Rothschild | ---; ---; 154 | Buxton | 1924 |
| | ---; ---; 342 | Anonymous | 1944b |
| <i>regis</i> Rothschild | ---; ---; 25 | da Costa Lima & Rothschild | 1946 |
| <i>sewelli</i> Sharif | ---; ---; 143 | Sharif | 1930 |
| <i>skryabini</i> Ioff | ---; ---; 162 | Tiflow & Ussov | 1939 + |
| | ---; ---; 256 | Sassuchin et al. | 1935 |
| | ---; ---; 354 | da Costa Lima & Hathaway | 1946 |

TABLE 2 - SUMMARY OF DISEASES OR DISEASE ORGANISMS TRANSMITTED BY FLEAS

| SPECIES | DISEASE OR DISEASE ORGANISM | | | | | COUNTRY |
|---|-----------------------------|---------------|-----------|----------------------------------|------------------------|---|
| | VIRUS & | | | | | |
| | RICKETTSIA | PROTOZOA | HELMINTHS | OTHER | | |
| <i>CERATOPHYLLUS</i> <i>anisus</i> Rothschild | | Murine typhus | | Plague | | 194 |
| <i>LEPTOPSYLLA</i> <i>seignis</i> (Schönherr) | | | | Plague | | 143 |
| <i>LOENOPSYLLA</i> <i>cheopis</i> (Rothschild) | | | | Plague | | 342 |
| <i>NOSOPSYLLUS</i> <i>faevatus</i> Bosc d'Antic | | Murine typhus | | Bubonic plague | 158 | 166 |
| <i>PULEX</i> <i>irritans</i> Linnaeus | | | | Bubonic plague | 158 | 168 |
| <i>XENOPSYLLA</i> <i>astia</i> Rothschild | | | | Plague | 59 70 | 143 144 |
| <i>brasiliensis</i> (Baker) | | | | Plague | | 143 |
| <i>cheopis</i> (Rothschild) | | | | <i>Bacillus</i> <i>pestis</i> | | 342 |
| | | | | Bubonic plague | | 139 |
| | | Murine typhus | | | | 76 (Ka et al 1948) 158 (Jameson 1953) 168 (Barnett & Toshioka 1951) 194 (Meisao 1946) |
| | | | | Plague | 70 76 144 158 | 168 194 242 317 |

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I. BUGS

The bugs or Hemiptera seem to be uncommon as pests of man in Asia. The few entries comprise a variety of species, several of which are not obligated blood feeders. Only 11 species or subspecies are listed for this group.

TABLE 1 - BUGS

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|---------------------------|-------|
| <i>CIMEX</i> <i>hemiptera</i> (Fabricius) | ---; experimentally infected of <i>Leishmania donovani</i> ; 143 | Shortt & Swaminath | 1924I |
| | ---; bites man in the dark and hides in crevices of walls, beds and seams of bedding in the daytime, experimental transmission of relapsing fever, Kala-azar, plague, and tularemia; 168° | Hsiao | 1948 |
| <i>Leotularius</i> Linnaeus | ---; experimentally infected with Kala-azar; 76 | Young & Hertig | 1929 |
| | ---; in beds, experimentally infected with <i>Spirochasta recurrentis</i> ; 76 | Chung | 1936 |
| | ---; found in cracks and crevices in furniture, experimental transmission of typhus from man to man; 76 | Liu | 1944 |
| | ---; experimentally infected with <i>Leishmania donovani</i> ; 143 | Shortt & Swaminath | 1924I |
| | ---; bites man in the dark and hides in crevices of walls, beds and seams of bedding in daytime; experimental transmission of relapsing fever, Kala-azar, plague and tularemia; 168° | Hsiao | 1948 |
| | ---; in crevices of beds and of rooms, bloodsucker; 242° | Banks | 1919 |
| | ---; experimentally infected with tularemia; 256 | Bozhenko | 1936 |
| | ---; experimentally infected with plague; 256 | Novikova & Lalazarov | 1932 |
| | ---; naturally and experimentally infected with <i>Spirochasta recurrentis</i> and <i>S. duttoni</i> , in houses; 256 | Rosenholz | 1927 |
| | ---; experimentally infected with tularemia; 317 | Server Kamil & Sait Bilal | 1938 |
| | ---; ---; 317° | Anonymous | 1944 |
| <i>rotundatus</i> Linnaeus | ---; from a bed, naturally infected with Kala-azar; 143 | Adie | 1922I |
| | ---; in clothing; 146 | Schwellengrebel & Otten | 1914 |

TABLE 1 -- BUGS (concluded)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|-----------------------------------|--|-----------------|------|
| <i>ECTOMOCORIS</i> | | | |
| <i>atrox</i> Stal | ---; bites may lead to secondary infection in man; 242° | Banks | 1919 |
| <i>ululans</i> Rossi | ---; ---; 318° | Vlasov | 1935 |
| <i>NEPHOTETIX</i> | | | |
| <i>apicalis</i> Motsch. | ---; bites at night; 242° | Banks | 1919 |
| <i>bipunctatus</i> Fabricius | ---; bites at night; 242° | Banks | 1919 |
| <i>REDUVIUS</i> | | | |
| <i>fedtschenkianus</i> Osch. | ---; ---; 318° | Vlasov | 1935 |
| <i>TRIATOMA</i> | | | |
| <i>rubrofasciata</i> (De Geer) | ---; experimentally infected with <i>Trypanosoma</i> <i>cruzi</i> ; 11, 59, 70, 76, 77, 139, 143, 144, 145, 146, 149, 190, 242, 270, 277 | Neiva & Lent | 1941 |
| | ---; enters houses at night; 76° | Esaki | 1926 |
| | ---; enters houses; 143 | Awati | 1921 |
| | ---; infected with flagellates of <i>Crithidia</i> <i>conorhini</i> Donovan, suspected vector of Kala-azar; 143. ---; enters houses at night, possible vector of chagas disease; 242° | Africa | 1934 |
| | ---; enters houses, possible vector of <i>Leishmania</i> ; 150° | Anonymous | 1943 |
| <i>rubrovaria</i> (Blanchard) | ---; ---; 146° | Larrousse | 1924 |

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J. URTICATING AND VESICATING ARTERPODS

The entries for urticating and vesicating arthropods are surprisingly few. Actually, only 23 species or subspecies are listed.

TABLE 1 - URTICATING AND VESICATING ARTHROPODS

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|--|------------------------|--------------|
| <i>ARCTORNIS</i> <i>xanthocampa</i> Dyar | ---; ---; 168* | Hsiao | 1948 |
| <i>DENDROLINUS</i> <i>spectabilis</i> Butler | ---; ---; 158* ---; ---; 168* | Wada Hsiao | 1925 1948 |
| <i>indana</i> <i>excellens</i> Butler | ---; ---; 168* | Hsiao | 1948 |
| <i>EOBIA</i> <i>cinererpennis</i> <i>ogasawarensis</i> Mats. | ---; ---; 232* | Kono | 1939 |
| <i>EUPROCTIS</i> <i>flava</i> Bremer | ---; attracted to light, enters houses, August; 76*. ---; indoors, July; 158* | Illingworth | 1926 |
| <i>GASTROPACHA</i> <i>quercifolia</i> Linnaeus | ---; ---; 168* | Mills Hsiao | 1923 1948 |
| <i>MARSOIDEUS</i> <i>flavidorsalis</i> Staudinger | ---; ---; 168* | Hsiao | 1948 |
| <i>MICROLEON</i> <i>longipalpis</i> Butler | ---; ---; 168* | Hsiao | 1948 |
| <i>NYGNIA</i> <i>sub-flava</i> Bremer | ---; early summer to early fall, poisonous hairs cause urticarial dermatitis when in contact with the body; 168*, 194*, 256* | Hsiao | 1948 |
| <i>OPHRANVEUS</i> <i>brevilabiatus</i> Hemp. | ---; common in houses in warm season, during day hidden in dark spots and cracks of walls; nocturnal, secretes a phosphorescent substance of strong phosphor smell, causing redness of the skin, unnatural swelling, blisters, crusts, peeling of the skin accompanied by much itching; 144* | Phisalix & Houdemer | 1934 |
| <i>OTOSTIGMUS</i> <i>aculeatus</i> Hasee | ---; common indoors during hot season, during day hidden in dark spots and cracks of walls, nocturnal, secretes a phosphorescent substance of strong smell, causing redness of the skin, unnatural swelling, blisters, crusts, peeling and much itching of the skin; 144* | Houdemer | 1926 |

TABLE 1 - URTICATING AND VESICATING ARTHROPODS (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|-------------------|---|-----------------------|------|
| <i>PAEDERUS</i> | ---; ---; 256* | Dallas | 1936 |
| <i>albipilis</i> | | | |
| Solsky | ---; experimentally produced dermatitis; 303 | Pavlovskii & Stein | 1929 |
| <i>alternans</i> | Found during the whole season, on boards of partly flooded ricefields, on grassy boards of ponds in marshes; May-Sept., common, enters houses; attracted to artificial light; 144* | Genevray et al | 1934 |
| Walker | ---; produce dermatitis; 144* | Pickel | 1940 |
| <i>fuscipes</i> | ---; ---; 31, 235, 256. Under grass and low bushy vegetation on sloping banks along rivers or permanent water channels, damp sandy loam or sandy soil; April-June, enters houses with artificial light, causes dermatitis; 143* | Isaac | 1933 |
| Curtis | Found during the whole season on boards of partly flooded ricefields, on grassy boards of ponds, in marshes; May-Sept., common, enters houses attracted by artificial light; 144* | Genevray et al | 1934 |
| | ---; ---; 256* | Pickel | 1940 |
| <i>idae</i> | ---; ---; 76*, 168* | Dallas | 1936 |
| Sharp | ---; ---; 158* | Pickel | 1940 |
| <i>melampus</i> | ---; enters houses, barracks, tents in rainy season; 143* | Rujatti | 1947 |
| Erichs | | | |
| <i>peregrinus</i> | ---; ---; 146* | Pickel | 1940 |
| Erichs | ---; ---; 146* | Dallas | 1936 |
| <i>riparius</i> | ---; ---; 158* | Pickel | 1940 |
| Linnaeus | | | |
| <i>PARASA</i> | | | |
| <i>consocta</i> | ---; ---; 168* | Hsiao | 1948 |
| Walker | | | |
| <i>hilarata</i> | Experimental transmission of dermatitis; ---; 76 | Mills | 1925 |
| Staudinger | | | |

TABLE 1 - URTICATING AND VESICATING ARTHROPODS (conclusion)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|--|------------------------|------|
| <i>PARASA</i> <i>sinica</i> Moore | ---; ---; 168* | Hsiao | 1948 |
| <i>SCOLOFENDRA</i> <i>cingulata</i> | ---; sting causes intense pain, wide inflammatory swollen condition of the tissue in various parts of the body; 144* | Phisalix & Houdemer | 1934 |
| <i>XANTHOCHROA</i> <i>atriiceps</i> Lewis | ---; common July, August; 158*, 256* | Kono | 1939 |

TABLE 2 - SUMMARY OF DISEASES OR DISEASE ORGANISMS TRANSMITTED BY
URTICATING AND VESICATING ARTHROPODS

| SPECIES | DISEASE ORGANISM | | | | COUNTRY |
|---|-----------------------|----------|-----------|------------------|-----------|
| | VIRUS & RICKETTSIA | PROTOZOA | HELMINTHS | OTHER | |
| ACTORNIS | | | | | |
| <i>xanthoampa</i> Dyar | | | | Der . titis | 168 |
| DENDROLIMUS | | | | Dermatitis | 158 |
| <i>spectabilis</i> Butler | | | | Dermatitis | 168 |
| <i>undans</i> <i>excellens</i> Butler | | | | Dermatitis | 168 |
| EOBIA | | | | | |
| <i>cinererpennis</i> <i>ogatawarensis</i> Mats. | | | | Skin vesicant | 232 |
| EUPROCTIS | | | | Dermatitis | 76, 158 |
| <i>flava</i> Bremer | | | | Dermatitis | 168 |
| GASTROPACHA | | | | | |
| <i>quercifolia</i> Linnaeus | | | | Dermatitis | 168 |
| MAROSOIDIUS | | | | | |
| <i>flavidorealis</i> Staudinger | | | | Dermatitis | 168 |
| MICROLEON | | | | | |
| <i>longipalpis</i> Butler | | | | Dermatitis | 168 |
| NYGMIA | | | | Dermatitis | 168 |
| <i>sub-flava</i> Bremer | | | | | 194 56 |
| ORPHANOEUS | | | | | |
| <i>brevilabialis</i> Wemp. | | | | Skin vesicant | 144 |
| OTOSTMIGNUS | | | | | |
| <i>aculeatus</i> Haase | | | | Skin vesicant | 144 |

TABLE 2 - URTICATING AND VESICATING ARTHROPODS (conclusion)

| SPECIES | DISEASE ORGANISM | | | | | COUNTRY |
|--------------------|-----------------------|----------|-----------|-------|---------------|--------------------|
| | VIRUS & RICKETTSIA | PROTOZOA | HELMINTHS | OTHER | | |
| <i>PAEDERUS</i> | | | | | | |
| <i>albipilis</i> | | | | | Dermatitis | 256 |
| Solsky | | | | | | |
| <i>alternans</i> | | | | | Dermatitis | 144 |
| Walker | | | | | | |
| <i>fuscipes</i> | | | | | Dermatitis | 143 |
| Curtis | | | | | Dermatitis | 144 |
| | | | | | Dermatitis | 256 |
| <i>idae</i> | | | | | Dermatitis | 76, 168 |
| Sharp | | | | | Skin vesicant | 158 |
| <i>melampus</i> | | | | | Vesicular | 143 |
| Erichs | | | | | dermatitis | |
| <i>peregrinus</i> | | | | | Dermatitis | 146 (Dallas, 1936) |
| Erichs | | | | | Skin vesicant | 146 |
| <i>riparius</i> | | | | | Skin vesicant | 158 |
| Linnaeus | | | | | | |
| <i>PARASA</i> | | | | | | |
| <i>consocia</i> | | | | | Dermatitis | 168 |
| Walker | | | | | | |
| <i>sinica</i> | | | | | Dermatitis | 168 |
| Moore | | | | | | |
| <i>SCOLOPENDRA</i> | | | | | Dermatitis | 144 |
| <i>cingulata</i> | | | | | | |
| <i>XANTHOCHROA</i> | | | | | Skin vesicant | 158 |
| <i>atriceps</i> | | | | | Dermatitis | 256 |
| Lewis | | | | | | |

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K. TICKS

The tick entries seldom include information on the immature forms separately from the adults. In fact, most of the entries contain only distributional data.

Ticks are important livestock pests in Asia; and also, some serious disease organisms are transmitted by ticks. In Table 1 are listed 401 species or subspecies.

TABLE 1 - TICKS

| SPECIES | SPECIFIC NOTES; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|-------------------------------|----------------------|
| <i>AMBLYONMA</i> <i>americanum</i> (Linnaeus) | ---; 242 | Robinson | 1926 |
| <i>babirussae</i> Schulze | ---; 145* | Anastos | 1950 |
| <i>boucaudi</i> Toumanoff | ---; 144 | Toumanoff | 1944 |
| <i>caelaturum</i> Cooper & Robinson | ---; 145 ---; 190, 280 | Schulze Robinson | 1936 1926 |
| <i>caelaturum</i> <i>perfectum</i> Schulze | ---; 149 | Schulze | 1936 |
| <i>cayennense</i> Fabricius | ---; 151 | Brumpt | 1938 |
| <i>clypeolatum</i> Neumann | ---; 70, 143 | Robinson | 1926 |
| <i>compactum</i> Neumann | ---; 149 | Bequaert | 1933 |
| <i>cordiferum</i> Neumann | ---; 146, 147, 277 | Anastos | 1950 |
| <i>orenatum</i> Neumann | ---; 146, 149, 190 | Anastos | 1950 |
| <i>cyprum</i> Neumann | ---; 76, 77, 242 ---; 144 ---; 145, 146, 147, 190 | Hsiao Toumanoff Anastos | 1945 1944 1950 |
| <i>cyprum</i> <i>aeratiops</i> Schulze | In houses; 242* | Kohls | 1950 |
| <i>dissimile</i> Koch | ---; 242 | Robinson | 1926 |
| <i>elephantinum</i> Koch | ---; 190 | Bequaert | 1933 |
| <i>elephantinus</i> Linnaeus | ---; 149 | Bequaert | 1933 |
| <i>extraoculatum</i> Neumann | ---; 280 | Robinson | 1926 |

TABLE 1 - TICKS (continued)

| SPECIES | SPECIFIC NOTES; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|-------------|-------|
| <i>AMBLYOMMA</i> <i>fallax</i> Schulze | ---; 190 | Bequaert | 1933 |
| <i>feuerborni</i> Schulze | ---; 146 | Schulze | 1933 |
| <i>formosanum</i> Schulze | ---; 77 | Schulze | 1935 |
| <i>geoemydae</i> (Cantor) | ---; 145, 149 | Anastos | 1950 |
| <i>hebraeum</i> Koch | ---; 70 | Robinson | 1926 |
| | Rare; 143 | Roy & Brown | 1954 |
| <i>helvolum</i> Koch | ---; 143, 145, 146, 190, 224, 242, 277, 280, 337 | Anastos | 1950 |
| | Feb.; 149 | Warburton | 1926a |
| <i>infestum</i> Koch | ---; 59 | Schulze | 1939 |
| | ---; 146, 149 | Bequaert | 1933 |
| <i>infestum</i> <i>borneense</i> Schulze | ---; 145 | Schulze | 1936a |
| <i>infestum</i> <i>taivanicum</i> Schulze | ---; 77 | Schulze | 1935 |
| <i>integrum</i> Karsch | ---; 70 | Warburton | 1925 |
| | ---; 143* | Toumanoff | 1944 |
| | ---; 143 | Sen | 1938 |
| <i>javanense</i> (Supino) | ---; 59, 70, 75, 76, 133, 143, 144, 146, 149, 190, 242, 277, 337 | Anastos | 1950 |
| <i>laticaudae</i> Warburton | ---; 280 | Warburton | 1933 |
| <i>lepidum</i> Dönitz | ---; 251 | King | 1926 |
| | ---; 342 | Bodenheimer | 1937 |
| <i>melayanum</i> Neumann | ---; 149, 190, 242, 280 | Anastos | 1950 |
| <i>nitidum</i> Hirst & Hirst | ---; 11 | Toumanoff | 1944 |

TABLE 1 - TICKS (continued)

| SPECIES | SPECIFIC NOTES; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|-----------------------------------|---|-----------------|-------|
| <i>AMBLYOMMA</i> | | | |
| <i>quadrinaculatum</i> Neumann | ---; 146, 149 | Schulze | 1933 |
| <i>robinsoni</i> Warburton | ---; 144 | Toumanoff | 1944 |
| | ---; 146 | Anastos | 1950 |
| <i>sublaeve</i> Neumann | ---; 59, 76, 143, 146, 149, 190, 235, 277 | Robinson | 1926 |
| | ---; 70 | Warburton | 1925 |
| | ---; 76, 143, 190, 337 | Hsiao | 1945 |
| | ---; 366 | Sen | 1938 |
| <i>subluteum</i> Neumann | ---; 149 | Bequaert | 1933 |
| <i>supinoi</i> Neumann | ---; 59, 366 | Schulze | 1939 |
| | ---; 143 | Sen | 1938 |
| | ---; 144 | Toumanoff | 1944 |
| | ---; 235 | Robinson | 1926 |
| <i>testudinarium</i> Koch | ---; 59°, 70°, 76°, 77, 143°, 144°, 145°, 146°, 147°, 149°, 190°, 337 | Anastos | 1950 |
| | ---; 59, 70, 143, 144, 145, 146, 190 | Robinson | 1926 |
| | May; 149 | Warburton | 1926b |
| | ---; 242° | Kohls | 1950 |
| | ---; 377° | Toumanoff | 1944 |
| | ---; 366 | Sen | 1938 |
| <i>variegatum</i> (Fabricius) | ---; 143 | Morel & Mouchet | 1958 |
| | At elevations 2500-5000 feet; 332 | Hoogstraal | 1956 |
| <i>yajimai</i> Kishida | ---; 77 | Kishida | 1935 |
| <i>APORONEM</i> | | | |
| <i>barboursi</i> Anastos | ---; 146 | Anastos | 1950 |
| <i>boureneti</i> Toumanoff | ---; 144 | Toumanoff | 1944 |

TABLE 1 - TICKS (continued)

| SPECIES | SPECIFIC NOTES; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|--|----------------------------|-------|
| <i>APONOMMA</i> | ---; 144 | Toumanoff | 1944 |
| <i>crassipes</i> Neumann | ---; 166 | Yakimoff | 1917 |
| <i>draconis</i> Warburton | ---; 146, 337 | Warburton | 1933 |
| <i>eoinotum</i> Neumann | ---; 242 | Kohls | 1950 |
| <i>fuscolineatum</i> (Lucas) | ---; 143, 337 | Schulze | 1936a |
| <i>gervaisi</i> (Lucas) | ---; 70, 143 | Schulze | 1936a |
| | ---; 144 | Toumanoff | 1944 |
| | ---; 146, 149 | Farner | 1943 |
| <i>gervaisi</i> var. <i>luoasi</i> Warburton | ---; 143 | Roy & Brown | 1954 |
| <i>komodoense</i> Oudemans | ---; 146 | Anastos | 1950 |
| <i>laeve</i> Neumann | ---; 143 | Sen | 1938 |
| <i>latum</i> (Koch) | ---; 337 | Howard | 1908 |
| <i>luoasi</i> Warburton | ---; 59, 70, 143, 146, 147, 149, 224, 277, 337 | Anastos | 1950 |
| <i>pattoni</i> Neumann | ---; 70 | Warburton | 1925 |
| | ---; 143 | Roubaud & Colas-Belcour | 1935 |
| <i>primaculatum</i> (Lucas) | ---; 70 | Warburton | 1925 |
| <i>pseudolaeve</i> Schulze | ---; 76 | Haiao | 1945 |
| <i>primaculatum</i> (Lucas) | ---; 147, 337 | Anastos | 1950 |
| | Feb.; 149 | Warburton | 1926a |
| <i>undatum</i> Fabricius | ---; 149 | Schulze | 1933 |
| <i>ARGAS</i> <i>boueti</i> Roubaud & Colas-Belcour | ---; 342 | Hoogstraal | 1956 |

TABLE 1 - TICKS (continued)

| SPECIES | SPECIFIC NOTES; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|--------------|-------------------|
| <i>ARGAS</i> | | | |
| <i>brumpti</i> Neumann | ---; 251° | King | 1926 |
| <i>miniatus</i> Koch | ---; 77 | Sugimoto | 1936 _a |
| <i>persicus</i> Oken | ---; 28 | Pomorantzev | 1934 |
| | ---; 31, 76, 162, 317, 318, 326, 345 (Summer) | Anastos | 1957 |
| | ---; 70 | Crawford | 1938 |
| | ---; 76° | Hsiao | 1945 |
| | ---; 112 | Matikashvili | 1932 |
| | ---; 143 | Sen | 1938 |
| | ---; 144 | Toumanoff | 1944 |
| | ---; 146 | Farner | 1943 |
| | In houses, attacks man and can cause illness and death; 150° (Bloodsucker, hides in crevices of woodwork) | Bedford | 1934 |
| | Suspected of transmitting relapsing fever to man; 150, 342. Widely spread; 342 | Adler et al. | 1937 |
| | Stables; 150 | Delpy | 1947 |
| | ---; 151 | Brumpt | 1938 |
| | ---; 154 | Buxton | 1924 |
| | ---; 168° | Kobayashi | 1925 |
| | In houses, in hay used for bedding; 235 | Rao & Kalra | 1949 |
| | ---; 251 | King | 1926 |
| | Experimentally infected with plague; 256 | Faddeeva | 1932 |
| | ---; 317 | Vogel | 1932 |
| | ---; 332 | Hoogstraal | 1956 |
| | Lowlands, subtropical and tropical countries, resistant to climactic influences; 342 | Rodenheimer | 1934 |
| <i>persicus</i> <i>persicus</i> Flecher de Waldheim | ---; 167, 326 | Yakimoff | 1917 |

TABLE 1 - TICKS (continued)

| SPECIES | SPECIFIC NOTES; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|--|------------------------|------|
| <i>ARGAS</i> | | | |
| <i>pipistrellae</i> Audouin | ---; 76 | Hoeppli & Feng | 1933 |
| <i>pusillus</i> Kohls | ---; 242 | Kohls | 1950 |
| <i>reflexus</i> (Fabricius) | ---; 76°, 256°.---; 303, 321, 326 | Anastos | 1957 |
| | ---; 143, 150, 256, 340, 342, 345 (Bites man, in houses) | Hoogstraal | 1956 |
| | ---; 162, | Yakimoff | 1922 |
| | Indoors, in cracks in walls and beams, May, July, Aug., Sept.; 317 | Vogel | 1927 |
| <i>reflexus</i> <i>hermanni</i> Audouin | ---; 256 | Hoogstraal & Kohls | 1960 |
| <i>reflexus</i> var. <i>indicus</i> Warburton | ---; 143 | Sharif | 1938 |
| <i>eavignyi</i> Audouin | ---; 2, 25, 143 (Loose soil in shade of desert trees and rocks, on man) | Bedford | 1934 |
| <i>vespertilionis</i> (Latreille) | ---; 70, 76, 143, 168, 242, 256 | Hoogstraal | 1956 |
| | ---; 77 | Neumann | 1913 |
| | Nov.; 144 | Borel | 1928 |
| | Tents, furniture, clothes; 151 | Patton | 1920 |
| | ---; 162, 345 | Anastos | 1957 |
| | ---; 321 | Yakimoff | 1922 |
| <i>BOOPHILUS</i> | | | |
| <i>annulata</i> Doeve | ---; 143 | Roy & Brown | 1954 |
| <i>annulatus</i> (Say) | ---; 145, 147 | Shuermans Stekhoven | 1923 |
| | ---; 151 | Patton | 1920 |
| | ---; 154 | Barton | 1924 |
| | ---; 303 | Galuso & Boopalov | 1935 |
| | ---; 317 | Stefko | 1917 |
| | ---; 342 | Smith | 1931 |

TABLE 1 - TICKS (continued)

| SPECIES | SPECIFIC NOTES; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|--|---------------------------|------|
| <i>BOOPHILUS</i> <i>annulatus</i> var. <i>australis</i> | ---; 11, 143, 144, 242* (Larvae found on man) | Toumanoff | 1944 |
| <i>australis</i> Fuller | ---; 11, 59, 242, 366 | Sharif | 1938 |
| | ---; 70 | Warburton | 1925 |
| | Game forest, fields, bushes, experimentally infected with murine typhus rickettsia; 143 | Kalra & Roa | 1949 |
| | ---; 235 | Sen | 1938 |
| <i>annulatus</i> var. <i>oalocaratus</i> (Birula) | ---; 35 | Yakimoff et al. | 1932 |
| | ---; 143 | Sen | 1938 |
| | ---; 146 | Schuurmans Stekhoven | 1923 |
| | ---; 162 | Yakimoff et al. | 1926 |
| | ---; 256 | Zolotarev | 1934 |
| | ---; 321 | Yakimoff | 1929 |
| | ---; 342 | Smith | 1931 |
| | Apr.-Aug.; 345 | Yakimoff et al. | 1929 |
| <i>annulatus</i> var. <i>caudatus</i> (Neumann) | ---; 77, 158, 168, 257 | Ugura | 1936 |
| <i>oalocaratus</i> Birula | ---; 35, 150, 162, 166, 303, 318, 321, 326, 345, 350 (Lowlying marshy areas, water meadows and edges of irrigation ditches) | Anastos | 1957 |
| | Apr.-Oct., Nov.; 118 | Markov & Bogoroditskii | 1935 |
| | ---; 151 | Brumpt | 1932 |
| | Abundant Mar.-Apr., June-Sept.; 256 | Kurchatov | 1940 |
| | ---; 317 | Weyer & Zumpt | 1952 |
| <i>oalocaratus</i> <i>balanionicus</i> Minning | ---; 317 | Minning | 1934 |
| <i>oalocaratus</i> <i>oalocaratus</i> Birula | ---; 345 | Minning | 1936 |

TABLE 1 - TICKS (continued)

| SPECIES | SPECIFIC NOTES; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|----------------------|--|-----------------------|------|
| <i>BOOPHILUS</i> | ---; 154 | Minning | 1934 |
| <i>calcaratus</i> | | | |
| <i>palestinensis</i> | ---; 342 | Minning | 1936 |
| Minning | | | |
| <i>calcaratus</i> | | | |
| <i>persicus</i> | ---; 150 | Minning | 1936 |
| Minning | | | |
| <i>caudatus</i> | ---; 31, 168 | Barnett & Toshioka | 1951 |
| Neumann | | | |
| <i>decoloratus</i> | ---; 144 | Lagrange | 1922 |
| (Koch) | | | |
| | ---; 150, 302 | Hoogstraal | 1956 |
| | ---; 168 | Hsiao | 1948 |
| <i>intraocularis</i> | ---; 150 | Minning | 1936 |
| Minning | | | |
| <i>microplus</i> | ---; 59, 145, 146, 147, 149, 224, 242, 337 | Anastos | 1950 |
| (Canestrini) | | | |
| | ---; 70, 76, 144, 158, 235 | Minning | 1934 |
| <i>minningi</i> | ---; 168 | Hsiao | 1948 |
| (Koshida) | | | |
| <i>schulzei</i> | ---; 154, 342 | Minning | 1934 |
| Minning | | | |
| <i>DERMACENTOR</i> | | | |
| <i>albopictus</i> | Experimentally infected with spotted fever; 168 | Hsiao | 1948 |
| (Packard) | | | |
| <i>andersoni</i> | Experimentally infected with typhus rickettsiae; 76 | Liu | 1944 |
| Stiles | | | |
| <i>antromi</i> | ---; 28 | Anastos | 1957 |
| Resnik | | | |
| <i>asper</i> | ---; 76 | Arthur | 1960 |
| Arthur | | | |
| <i>atrosignatus</i> | ---; 77 | Neumann | 1913 |
| Neumann | | | |
| <i>auratus</i> | ---; 59* | Anastos | 1950 |
| Supiao | | | |
| | ---; 70 | Warburton | 1925 |
| | Suspected vector of tick typhus fever; 143. Naturally infected with tick typhus fever; 149 | Sharif | 1938 |
| | ---; 145* | Sen | 1938 |

TABLE 1 - TICKS (continued)

| SPECIES | SPECIFIC NOTES; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|-------------------------|--|--------------------|-------|
| <i>DERMACENTOR</i> | --- | Toumanoff | 1944 |
| <i>auratus</i> | --- | Arthur | 1960 |
| Supino (cont.) | --- | Warburton | 1926a |
| | Apr.; 14° | Warburton | 1926b |
| | Aug.; 149 | Hsiao | 1945 |
| <i>birulai</i> | --- | Olenev | 1929 |
| <i>Olenev</i> | --- | | |
| <i>birulai</i> | --- | | |
| <i>bukunorunsis</i> | --- | | |
| <i>Olenev</i> | --- | | |
| <i>coreus</i> | --- | Barnett & Toshioka | 1951 |
| Itaki, Noda & Yamaguchi | --- | | |
| <i>daghestanicus</i> | --- | Pomerantzev | 1946 |
| <i>Olenev</i> | --- | | |
| <i>daghestanicus</i> | --- | Schulze | 1933a |
| <i>daghestanicus</i> | --- | | |
| <i>Olenev</i> | --- | | |
| <i>daghestanicus</i> | --- | Schulze | 1933a |
| <i>sillemi</i> | --- | | |
| Schulze | --- | | |
| <i>everestianus</i> | --- | Hsiao | 1945 |
| Hirst | --- | | |
| <i>marginatus</i> | --- | Anastos | 1957 |
| (Sulzer) | --- | | |
| | Steppe forest; 256* | Karpov et al. | 1960 |
| <i>marginatus</i> | --- | Schulze | 1933a |
| <i>marginatus</i> | --- | | |
| (Sulzer) | --- | | |
| <i>nitens</i> | Experimentally infected with typhus | Liu | 1944 |
| Neumann | <i>rickettsiae</i> ; 76 | | |
| | --- | Sugimoto | 1936 |
| | --- | | |
| <i>niveus</i> | --- | Anastos | 1957 |
| Neumann | --- | | |
| | --- | Yakimoff et al. | 1932 |
| | --- | | |
| | --- | Matikashvili | 1932 |
| | --- | | |
| | Apr.-June; 256° | Popov | 1928 |

TABLE 1 - TICKS (continued)

| SPECIES | SPECIFIC NOTES; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---------------------|--|---------------------------|-------|
| <i>DERMACENTOR</i> | | | |
| <i>nuttalli</i> | ---; 76, 256°, 353 | Anastos | 1957 |
| <i>Olenev</i> | ---; 209 | Schulze | 1933a |
| | Transmitter of a typhical typhus; 256* | Pletzity | 1947 |
| | ---; 256* | Petrova- Plootkovskaya | 1941 |
| <i>otrosignatus</i> | ---; 77 | Sugimoto | 1936 |
| <i>Neumann</i> | | | |
| <i>pavlovskiy</i> | ---; 31, 162, 166, 326 | Anastos | 1957 |
| <i>Olenev</i> | | | |
| <i>pictus</i> | ---; 60, 162, 166, 194, 256°. Aug.-Apr.; 345 | Anastos | 1957 |
| <i>Hermann</i> | | | |
| | In steppes; 256 | Pletzity | 1947 |
| | ---; 256* | Karpov et al. | 1960 |
| <i>pomerantzevi</i> | ---; 256 | Anastos | 1957 |
| <i>Serdiukova</i> | | | |
| <i>pomerantzevi</i> | | | |
| <i>serdjukova</i> | ---; 256 | Serdiukova | 1951 |
| <i>Serdiukova</i> | | | |
| <i>raskemensis</i> | Nov.; 162 | Anastos | 1957 |
| <i>Pomerantzev</i> | | | |
| <i>reticulatus</i> | ---; 60, 162, 256, 321, 345 | Yakimoff | 1917 |
| <i>Fabricius</i> | | | |
| | ---; 76 | Hsoppli & Feng | 1933 |
| | ---; 168° | Barnett & Toshioka | 1951 |
| | ---; 194° | Hsiao | 1945 |
| | ---; 194 | Hsiao | 1946 |
| | Possible vector of Omsk haemorrhagic fever and Russian Spring Summer Encephalitis; 256 | Thompson | 1964 |
| | Attacks man; 256° | Belitzer | 1914 |
| <i>reticulatus</i> | | | |
| <i>niveus</i> | ---; 162, 345 | Yakimoff | 1922 |
| <i>Neumann</i> | | | |
| <i>reticulatus</i> | | | |
| <i>reticulatus</i> | ---; 162, 318 | Yakimoff | 1917 |
| <i>Fabricius</i> | | | |

TABLE 1 - TICKS (continued)

| SPECIES | SPECIFIC NOTES; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---------------------------|---|---------------|-------|
| <i>DERMACENTOR</i> | --- | Anastos | 1957 |
| <i>silvarum</i> | --- | Matikashvili | 1932 |
| <i>Olenev</i> | Mar.-Sept.; 162° | Golov | 1933 |
| | --- | Hsiao | 1946 |
| | Forest and bush vegetation, May-Sept.; 256, 353 (Vector of endemic encephalites, tularemia, plague and tick-borne typhus) | Arthur | 1960 |
| | Grass steppes, July-Aug.; 256* | Pletzity | 1947 |
| | Steppe forest zone; 256 | Karpov et al. | 1960 |
| | Experimentally infected with tularemia; 256 | Sassuchin | 1936 |
| | --- | Pavlovskii | 1947 |
| | --- | Anastos | 1957 |
| | --- | Pogorely | 1936 |
| <i>silvarum</i> | --- | | |
| <i>ablutus</i> | --- | Schulze | 1933a |
| <i>Schulze</i> | | | |
| <i>silvarum</i> | --- | Schulze | 1933a |
| <i>silvarum</i> | --- | | |
| <i>Olenev</i> | | | |
| <i>sinicus</i> | --- | Hsiao | 1945 |
| <i>Schulze</i> | | | |
| <i>sinicus</i> | --- | Hsiao | 1945 |
| <i>pallidior</i> | | | |
| <i>Schulze</i> | | | |
| <i>sinicus</i> | --- | Schulze | 1933a |
| <i>sinicus</i> | | | |
| <i>Schulze</i> | | | |
| <i>taiwanensis</i> | --- | Toumanoff | 1944 |
| <i>Sugimoto</i> | | | |
| <i>variabilis</i> | --- | Banks | 1919 |
| <i>Say</i> | | | |
| <i>variegatus</i> | --- | Yakimoff | 1917 |
| <i>var. kamtschadalus</i> | | | |
| <i>Neumann</i> | | | |
| <i>varius</i> | --- | Schulze | 1933a |
| <i>kamtschadalus</i> | | | |
| <i>Neumann</i> | | | |

TABLE 1 - TICKS (continued)

| SPECIES | SPECIFIC NOTES; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|--|------------------------|------|
| <i>DERMACENTOR</i> | | | |
| <i>renustus</i> Banks | ---; 280 | Sarsuchin | 1934 |
| <i>DISCOLOPHUS</i> | | | |
| <i>tokunagai</i> Kishida | ---; 76 | Hsiao | 1946 |
| <i>HAEMAPHYSALIS</i> | | | |
| <i>aborensis</i> Warburton | ---; 143, 144 | Toumanoff | 1944 |
| <i>aculeata</i> Lavorra | ---; 70 | Warburton | 1925 |
| | ---; 143° | Strickland | 1939 |
| <i>arbigua</i> Neumann | ---; 162 | Yakimoff | 1922 |
| | ---; 345 | Yakimoff | 1917 |
| <i>angorensis</i> Schulze & Schlottke | ---; 317 | Schulze & Schlottke | 1927 |
| <i>bequaerti</i> Hoogstraal | ---; 332 | Hoogstraal | 1956 |
| <i>binneari</i> Warburton | ---; 143 | Toumanoff | 1944 |
| <i>birmaniae</i> Supino | ---; 31, 143 | Schulze | 1935 |
| | ---; 59, 76, 77, 145, 149, 158 | Hsiao | 1945 |
| | ---; 144 | Toumanoff | 1944 |
| <i>biapinosa</i> Neumann | ---; 11, 59, 70, 76, 77, 144, 145, 146, 158, 190, 337 | Anastos | 1950 |
| | Probable vector of tropical typhus fever; 143, 149 | Toumanoff | 1944 |
| | ---; 143° | Roy & Brown | 1954 |
| | ---; 151 | Patton | 1920 |
| | Possible vector of "Q" fever; 168° | Barnett & Toshioka | 1951 |
| | ---; 256° | Hsiao | 1948 |
| | ---; 256 | Hsiao | 1945 |
| | ---; 280 | Krijgeman & Ponto | 1931 |

TABLE 1 - TICKS (continued)

| SPECIES | SPECIFIC NOTES; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|----------------------|---|--------------------------|------|
| <i>HAEMAPHYSALIS</i> | | | |
| <i>bispinosa</i> | | | |
| <i>neumanni</i> | ---; 294 | Pospelova-Schtroum | 1940 |
| Pospelova-Schtroum | | | |
| <i>bispinosa</i> | ---; 70 | Warburton | 1925 |
| <i>intermedia</i> | | | |
| Warburton & Nuttall | ---; 143 | Sen | 1938 |
| <i>calvus</i> | ---; 145 | Toumanoff | 1944 |
| Nuttall & Warburton | | | |
| <i>campanulata</i> | ---; 76, 158, 353 | Hsiao | 1945 |
| Warburton | | | |
| | ---; 143 | Sen | 1938 |
| | Experimentally infected with <i>Trypanosoma</i> and <i>Leishmania</i> ; 151 | Brumpt | 1938 |
| | ---; 168 | Barnett & Toshioka | 1951 |
| <i>campanulata</i> | | | |
| <i>hoepli</i> | ---; 76 | Hsiao | 1945 |
| Schulze | | | |
| <i>caucasica</i> | ---; 150, 162, 166, 256, 303, 345 | Anastos | 1957 |
| Olenev | | | |
| <i>centropi</i> | ---; 59, 190, 242 | Kohls | 1950 |
| Kohls | | | |
| <i>chodorovskii</i> | ---; 28 | Pavlovskii & Pomerantzev | 1934 |
| Olenev | | | |
| | ---; 118 | Matikashvili | 1932 |
| | ---; 150 | Delpy | 1938 |
| | ---; 256 | Zolotarev | 1934 |
| <i>choprai</i> | ---; 143 | Toumanoff | 1944 |
| Sharif | | | |
| <i>cinnabarina</i> | ---; 154 | Buxton | 1924 |
| Koch | | | |

TABLE 1 - TICKS (continued)

| SPECIES | SPECIFIC NOTES; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|----------------------|--|--------------------------|-------|
| <i>HAEMAPHYSALIS</i> | ---; 28 | Pavlovskii & Pomerantzev | 1934 |
| <i>cinabarinna</i> | | | |
| <i>punctata</i> | ---; 35 | Yakimoff et al. | 1932 |
| Canestrini & Fanzago | | | |
| | ---; 143 | Sharif | 1938 |
| | ---; 150 | Delpy | 1938 |
| | ---; 151 | Khayyat & Gilder | 1947 |
| | ---; 162 | Galuzo et al. | 1944 |
| | ---; 256 | Sassuchin & Tiflow | 1933 |
| | ---; 317 | Nuttall | 1916 |
| <i>oonoinna</i> | ---; 31, 150, 158, 168 (Forest zones). | Anastos | 1957 |
| Koch | ---; 35, 118, 162, 166, 256, 345 (Forest zones, March-Sept.) | | |
| | March-Aug.; 168, 194** | Pavlovskii | 1947 |
| | ---; 256* | Karpov et al. | 1960 |
| | ---; 256* | Pletchity | 1947 |
| <i>oonoinna</i> | | | |
| <i>kochi</i> | ---; 162, 256 | Yakimoff | 1917 |
| Neumann | | | |
| <i>oornigera</i> | ---; 59, 77, 143, 145, 146, 190, 235, 280, 337 | Anastos | 1950 |
| Neumann | | | |
| | April; 144. ---; 149 | Larrouse | 1925 |
| <i>oornigera</i> | ---; 143 | Sen | 1938 |
| <i>anomala</i> | | | |
| Warburton | ---; 144, 145, 190 | Toumanoff | 1944 |
| <i>oornigera</i> | | | |
| <i>taikana</i> | ---; 77 | Sugimoto | 1936 |
| Sugimoto | | | |
| <i>cuspidata</i> | ---; 70 | Toumanoff | 1944 |
| Warburton | | | |
| <i>dentipalpis</i> | ---; 144 | Toumanoff | 1944 |
| Warburton & Nuttall | | | |
| <i>doenitai</i> | ---; 190, 280 | Kohls | 1950a |
| Warburton & Nuttall | | | |
| <i>exoniensis</i> | ---; 168 | Barnett & Toshioka | 1951 |
| Ogura & Takada | | | |

TABLE 1 - TICKS (continued)

| SPECIES | SPECIFIC NOTES; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|----------------------|---|--------------------|-------|
| <i>HAEMAPHYSALIS</i> | ---; 77, 158 | Toumanoff | 1944 |
| <i>flava</i> | --- | | |
| Neumann | ---; 143* | Sen | 1938 |
| | ---; 151 | Patton | 1920 |
| | ---; 168 | Barnett & Toshioka | 1951 |
| | ---; 345 | Yakimoff | 1917 |
| <i>formosensis</i> | ---; 59, 144 | Toumanoff | 1944 |
| Neumann | April; 77 | Neumann | 1913 |
| <i>genevrayi</i> | ---; 144 | Toumanoff | 1944 |
| Toumanoff | | | |
| <i>heinrichi</i> | ---; 59* | Schulze | 1939 |
| Schulze | | | |
| <i>hirudo</i> | ---; 256 | Yakimoff | 1917 |
| Koch | | | |
| <i>hoogstraali</i> | ---; 242 | Kohls | 1950 |
| Kohls | | | |
| <i>houletti</i> | ---; 143 | Toumanoff | 1944 |
| Warburton | | | |
| <i>hylobatis</i> | ---; 149 | Anastos | 1950 |
| Schulze | | | |
| <i>hystrioides</i> | ---; 59*, 70, 76, 77, 143, 144, 145, 190, 337 | Anastos | 1950 |
| Supino | | | |
| | ---; 59, 146 | Schulze | 1935 |
| | April; 149 | Warburton | 1926a |
| | July; 149 | Warburton | 1926b |
| <i>iberica</i> | ---; 345 | Zakharov | 1926 |
| (Jordan) | | | |
| <i>inermis</i> | ---; 28, 35, 118, 150, 162, 166, 207, 256. Sept.-April; 345 | Anastos | 1957 |
| Birula | | | |
| <i>japonica</i> | ---; 76, 158 | Heiao | 1945 |
| Warburton | ---; 256 | Grusdeva | 1943 |

TABLE 1 - TICKS (continued)

| SPECIES | SPECIFIC NOTES; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|------------------------|--|--------------------|-------|
| <i>HAEMAPHYSALIS</i> | ---; 76, 158, 168, 256 | Anastos | 1957 |
| <i>japonica</i> | | | |
| <i>douglasi</i> | ---; 294 | Pospelova-Schtroum | 1940 |
| Nuttall & Warburton | | | |
| <i>japoensis</i> | ---; 158 | Ogura & Takada | 1927 |
| Ogura & Takada | | | |
| <i>kinneari</i> | ---; 144 | Toumanoff | 1944 |
| Warburton | | | |
| <i>koningsebergeri</i> | ---; 145, 146, 149 | Anastos | 1950 |
| Nuttall & Warburton | | | |
| <i>lagrangei</i> | April; 144 | Larrousse | 1925 |
| Larrousse | | | |
| <i>leachi</i> | ---; 143 | Sen | 1938 |
| Audouin | | | |
| | ---; 144 | Toumanoff | 1944 |
| | ---; 145, 146, 149 | Farner | 1943 |
| | Apr.; 149 | Warburton | 1926a |
| | May; 149 | Warburton | 1926b |
| | ---; 190 | Fielding | 1926 |
| | ---; 251 | King | 1926 |
| | ---; 256 | Olenov | 1928 |
| | ---; 342 | Bodenheimer | 1937 |
| <i>leachi</i> | Experimental transmission of fever; | Browning & | 1948 |
| var. <i>indica</i> | 143 | Kalra | |
| Warburton | | | |
| | ---; 144 | Toumanoff | 1944 |
| <i>leachii</i> | ---; 332 (Vector of <i>Rickettsia conorii</i> | Hoogstraal | 1956 |
| <i>leachii</i> | and <i>Coxiella burnetii</i> and experimentally | | |
| (Audouin) | infected with <i>Rickettsia rickettsii</i>) | | |
| <i>leachii</i> | ---; 332 | Hoogstraal | 1956 |
| <i>muhammadi</i> | | | |
| Santos Dias | | | |
| <i>lemuris</i> | ---; 149 | Hoogstraal & | 1959 |
| Schulze | | Theiler | |
| <i>leporis</i> | ---; 345 | Yakimoff | 1917 |
| (Packard) | | | |

TABLE 1 - TICKS (continued)

| SPECIES | SPECIFIC NOTES; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|--|------------------------|-------|
| <i>HAEMAPHYSALIS</i> | | | |
| <i>menui</i> Toumanoff | ---; 144 | Toumanoff | 1944 |
| <i>mesnardi</i> Toumanoff | ---; 144 | Toumanoff | 1944 |
| <i>minuta</i> Kohls | ---; 70 | Kohls | 1950a |
| <i>mjobergi</i> Warburton | ---; 145 | Warburton | 1926 |
| <i>montgomeryi</i> Nuttall | ---; 143 ^o | Strickland | 1939 |
| | ---; 143 | Sen | 1938 |
| <i>neumanni</i> Donitz | ---; 70, 76, 158, 256 | Hsiao | 1946 |
| | ---; 168 | Barnett & Toshioka | 1951 |
| <i>nishiyamas</i> Sugimoto | ---; 77 ^o | Sugimoto | 1935 |
| | ---; 77 | Sugimoto | 1936 |
| <i>novae-guineae</i> Krijgsman & Ponté | ---; 144 | Toumanoff | 1944 |
| <i>numidiana</i> Neumann | ---; 162 | Sassuchin | 1933 |
| | ---; 256 | Sassuchin & Tiflow | 1933 |
| | ---; 326 | Olenev | 1930 |
| <i>numidiana</i> <i>turanica</i> Pospelova- Schtron | ---; 31, 150, 162, 166, 256, 303, 318, 326, 345 | Anastos | 1957 |
| | ---; 294 | Pospelova- Schtron | 1940 |
| <i>obesa</i> Larrousee | February; 144 | Larrousee | 1925 |
| <i>otophila</i> Schulze | ---; 28, 35, 118, 256, 321, 345, 350 | Anastos | 1957 |
| | ---; 151, 159, 342 | Hoogstraal & Kaiser | 1960 |
| | ---; 317 | Vogel | 1927 |
| <i>palawanensis</i> Kohls | ---; 242 | Kohls | 1950 |

TABLE 1 - TICKS (continued)

| SPECIES | SPECIFIC NOTES: DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|-------------------------|---|-----------------------|------|
| <i>HAEMAPHYSALIS</i> | ---; 144, 145, 146, 147, 149, 190 | Anastos | 1950 |
| <i>papuae</i> | | | |
| Thorell | ---; 168 | Barnett & Toshioka | 1951 |
| | ---; 242 | Kohls | 1950 |
| | ---; 345 | Yakimoff | 1917 |
| <i>parva</i> | ---; 70, 143 | Schulze | 1933 |
| Neumann | | | |
| <i>pavlovskii</i> | ---; 294 | Pospelova- Schtrom | 1940 |
| Pospelova- Schtrom | ---; 303 | Anastos | 1957 |
| <i>punctata</i> | ---; 28, 35, 118, 150, 162, 166, 256, 303, 321, 326 | Anastos | 1957 |
| Canestrini & Fanzago | ---; 342 | Bodenheimer | 1937 |
| | ---; 345 | Yakimoff | 1917 |
| <i>ranschi</i> | Mountain lake at 1200 m. elevation, mountain rainforest with sparse under- brush; 146 | Schulze | 1936 |
| Schulze | | | |
| <i>roubaudi</i> | ---; 144 | Toumanoff | 1944 |
| Toumanoff | | | |
| <i>rusae</i> | ---; 242 | Kohls | 1950 |
| Kohls | | | |
| <i>sciusi</i> | ---; 242 | Kohls | 1950 |
| Kohls | | | |
| <i>sewelli</i> | ---; 235 | Toumanoff | 1944 |
| Sharif | | | |
| <i>spinigera</i> | ---; 70 | Warburton | 1925 |
| Neumann | ---; 143 | Sen | 1938 |
| | ---; 144 | Toumanoff | 1944 |
| <i>subdata</i> | ---; 28, 35, 76, 118, 143, 150, 162, 256, 303, 326, 342, 343 | Anastos | 1957 |
| Canestrini & Fanzago | | | |
| <i>sundrai</i> | ---; 143 | Toumanoff | 1944 |
| Sharif | | | |
| <i>taxopei</i> | ---; 147 | Anastos | 1950 |
| Warburton | | | |

TABLE 1 - TICKS (continued)

| SPECIES | SPECIFIC NOTES; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|--|-----------------------|-------|
| <i>HAEMAPHYSALIS</i> | | | |
| <i>traguli</i> Oudemans | ---; 146, 190 | Anastos | 1950 |
| <i>trispinosa</i> Toumanoff | ---; 144 | Toumanoff | 1944 |
| <i>turturis</i> Nuttall & Warburton | ---; 70 | Toumanoff | 1944 |
| | ---; 142 | Sen | 1938 |
| <i>turturis</i> <i>lalipunctata</i> Toumanoff | ---; 144 | Toumanoff | 1944 |
| <i>vidua</i> Warburton & Nuttall | ---; 190 | Toumanoff | 1944 |
| <i>warburtoni</i> Nuttall | ---; 35, 118, 166, 256, 345 | Anastos | 1957 |
| | ---; 76, 77, 158 | Hsiao | 1945 |
| <i>wellingtoni</i> Nuttall & Warburton | ---; 11, 59, 143, 144, 145, 146, 149, 190, 277, 337 | Anastos | 1950 |
| <i>yeni</i> Toumanoff | ---; 144 | Toumanoff | 1944 |
| <i>HYALOMMA</i> | | | |
| <i>aegyptium</i> (Linnaeus) | ---; 3, 28, 35, 118, 150, 162, 256, 302, 303, 317, 318, 326, 345, 350 | Anastos | 1957 |
| | ---; 70 | Hutson | 1921 |
| | ---; 76 | Howard | 1908 |
| | Common, possible vector of typhus; 143 | Mehta | 1937 |
| | Jan.-March; 143 | Sharif | 1930a |
| | ---; 143° | Roy & Brown | 1954 |
| | ---; 146, 353 | Hsiao | 1945 |
| | ---; 151 | Patton | 1920 |
| | ---; 154, 159 | Buxton | 1924 |
| | ---; 168 | Barnett & Toshioka | 1951 |
| | ---; 235 | Sharif | 1938 |
| | ---; 251 | King | 1926 |
| | ---; 317°, 342 | Hoogetraal | 1956 |
| | ---; 321 | Yakimoff | 1917 |
| | Desert, less tolerant towards low humidity; 342° | Bodenheimer | 1934 |

TABLE 1 - TICKS (continued)

| SPECIES | SPECIFIC NOTES; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|--|---------------|-------|
| <i>HYALOMMA</i> | | | |
| <i>aegyptium</i> | | | |
| <i>aegyptium</i> Linnaeus | ---; 162, 318, 326 | Yakimoff | 1917 |
| <i>aegyptium</i> <i>dromedarii</i> Koch | ---; 143, 235 | Sharif | 1938 |
| | ---; 162, 326 | Yakimoff | 1917 |
| | ---; 345 | Yakimoff | 1922 |
| <i>aegyptium</i> <i>ferozodini</i> Sharif | ---; 143 | Sen | 1938 |
| <i>aegyptium</i> <i>isaaci</i> Sharif | ---; 143 | Sen | 1938 |
| <i>aegyptium</i> <i>mesopotamium</i> Schulze | ---; 151 | Schulze | 1919 |
| <i>amurensae</i> Schulze | ---; 256 | Anonymous | 1944a |
| <i>anatolicum</i> Koch | ---; 35 | Kurchatov | 1941 |
| | ---; 150, 256, 318, 326 | Pomerantsev | 1946 |
| | Mar.-Sept.; 162 | Galuzo | 1944 |
| | ---; 303 | Serdiukova | 1946 |
| | ---; 342* | Bodenheimer | 1937 |
| | ---; 350 | Olenev | 1931 |
| <i>anatolicum</i> <i>excavatum</i> Koch | ---; 150, 162, 318 | Pomerantsev | 1946 |
| | ---; 256 | Pervomaiskii | 1949 |
| <i>asiaticum</i> Schulze & Schlotke | ---; 162*, 318*, 326 | Pomerantsev | 1946 |
| | ---; 256 | Markov et al. | 1948 |
| | ---; 303 | Serdiukova | 1946a |
| <i>oinnaharina</i> <i>punctata</i> Canestrini and Fantago | ---; 342 | Smith | 1931 |
| <i>dalpyi</i> Schulze & Gossel | ---; 150 | Schulze | 1936b |

TABLE 1 - TICKS (continued)

| SPECIES | SPECIFIC NOTES; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|---|--------------------|--------|
| <i>HYALOMMA</i> <i>detritum</i> Schulze | Saline, marshy grasslands and pasture-lands; 28. ---; 31, 76, 143, 150. Oct., moist meadows, water side vegetations or under grasses, Feb.-Sept.; 162. ---; 168, 194. Forest meadows and open fields, common; 256. ---; 294, 302. Common in irrigated valleys; 303. ---; 317, 321. Possible vector of Uzbekistan hemorrhagic fever, natural reservoir of <i>Coxiella burnetii</i> ; 326. ---; 340, 342. Deserts and steppes; 345. ---; 349, 350, 353. (Harbors <i>Pasteurella pestis</i>). | Hoogstraal | 1956 |
| | ---; 35, 118, 162°, 318, 354 | Anastos | 1957 |
| | ---; 154 | Feldman-Muehsam | 1948 |
| <i>detritum</i> <i>albipictum</i> Schulze | ---; 76 | Schulze | 1930 a |
| | ---; 194 | Hsiao | 1946 |
| <i>detritum</i> <i>damascenium</i> Schulze & Schlottke | ---; 302 | Schulze | 1930 a |
| <i>detritum</i> <i>perstrigatum</i> Schulze | ---; 76 | Hsiao | 1945 |
| <i>detritum</i> <i>rubrum</i> Schulze & Olenov | ---; 28 | Pomerantzev | 1934 |
| | ---; 35 | Yakimoff et al. | 1932 |
| | ---; 162 | Schulze | 1930 a |
| | ---; 303 | Galuzo & Besspalov | 1935 |
| | Mar.-July; 326 | Galuzo | 1935 |
| <i>dromedarii</i> Koch | ---; 2, 3, 28, 31, 76, 143, 144, 150, 159, 235, 256°, 270, 294, 303, 317, 318, 326, 340, 342. April-Oct.; 162. Mountain areas at 7000 feet altitude, attracted to man; 332. Deserts and semi-deserts; 345 (Host and vector of <i>Coxiella burnetii</i>) | Hoogstraal | 1956 |
| | ---; 35, 166, 256, 302, 353 | Anastos | 1957 |
| | Experimentally infected with <i>Trypanosoma</i> , <i>Crithidia</i> , <i>Leishmania</i> parasite; 151 | Brumpt | 1938 |
| | ---; 342° | Bodenheimer | 1937 |

TABLE 1 - TICKS (continued)

| SPECIES | SPECIFIC NOTES; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---------------------------|--|-------------------------|------|
| <i>HiALOMMA</i> | | | |
| <i>dromedarii</i> | ---; 28 | Caluzo | 1934 |
| <i>asiaticum</i> | ---; 162 | Olenov | 1930 |
| Schulze & Schlottke | ---; 318 | Vlasov | 1932 |
| <i>dromedarii</i> | | | |
| <i>indosinensis</i> | ---; 144 | Toumanoff | 1944 |
| Toumanoff | | | |
| <i>excavatum</i> | ---; 2, 3, 25, 143, 150, 151°, 174, 256, 270, 302, 313, 342, 349, 350. In pastures, at 6500 feet and higher; 28. Transovarial transmission of Japanese encephalitis and Russian encephalitis; 293. Feb.-Nov.; 303. Common on steppes, at 6500 feet elevation and higher; 317°. Naturally infected with <i>Coxiella burnetii</i> ; 326°. At 6500 feet elevation and higher; 332°. Deserts and semi-deserts and steppe formations; 345 | Hoogstraal | 1956 |
| Koch | ---; 162, 318. All year, peak May-July, possible vector of Haemorrhagic fever; 326. March-Oct.; 345 | Anastos | 1957 |
| <i>hussaini</i> | Jan.; 143 | Sharif | 1930 |
| Sharif | ---; 349 | Hoogstraal | 1956 |
| <i>hussaini</i> | ---; 143, 366 | Sharif | 1938 |
| var. <i>brevipunctata</i> | | | |
| Sharif | | | |
| <i>impeltatum</i> | ---; 25, 150, 151, 317, 332, 342 | Hoogstraal | 1956 |
| Schulze & Schlottke | | | |
| <i>impressum</i> | ---; 342° | Bodenheimer | 1937 |
| Koch | ---; 342 | Adler & Feldman-Muehsam | 1948 |
| <i>kozlovi</i> | ---; 256 | Anonymous | 1945 |
| Olenov | ---; 353 | Hsiao | 1945 |
| <i>kumari</i> | Feb.; 143 | Sharif | 1930 |
| Sharif | ---; 235 | Sen | 1938 |

TABLE 1 - TICKS (continued)

| SPECIES | SPECIFIC NOTES; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|---|-------------------------------|------|
| <i>HYALomma</i> <i>marginatum</i> Koch | In semi-deserts and at altitudes of 6500 feet and over; 28. ---; 143, 144, 150, 151, 159, 174. Forest, March-Sept.; 256*° ---; 294, 302, 317, 332, 342. Highlands, forest zones, in desert and steppe formations; 345 (Naturally infected with <i>Coxiella brunetii</i>) | Hoogstraal | 1956 |
| | ---; 35 | Yakimoff et al. | 1932 |
| | ---; 118 | Matikashvili | 1932 |
| | ---; 162 | Tzelishcheva | 1940 |
| | Steppe, mountain forest; 256 | Korshunova & Piontkovskaya | 1949 |
| | ---; 321, 350 | Pomerantzev | 1946 |
| | ---; 342° | Bodenheimer | 1937 |
| <i>marginatum</i> <i>bucuense</i> Schulze | ---; 35 | Olenev | 1935 |
| <i>marginatum</i> <i>balsanum</i> Schulze & Schlottke | ---; 256, 350 | Olenev | 1931 |
| <i>marginatum</i> <i>impressum</i> Koch | ---; 162, 256 | Pomerantzev | 1946 |
| <i>marginatum</i> <i>olenevi</i> Schulze & Schlottke | ---; 162, 345 | Olenev | 1931 |
| <i>marginatum</i> <i>turanicum</i> (Pomerantzev) | ---; 150, 162 | Pomerantzev | 1946 |
| <i>pavlovskii</i> Schulze & Schlottke | ---; 345 | Olenev | 1931 |
| <i>pusillum</i> Schulze | ---; 2 | Bequaert | 1930 |
| | Naturally and experimentally infected with <i>Trypanosoma</i> , <i>Crithidia</i> , <i>Leishmania</i> , Oct.; 151 | Brumpt | 1938 |
| <i>pusillum</i> <i>alexandrinum</i> Schulze | ---; 317 | Vogel | 1927 |

TABLE 1 - TICKS (continued)

| SPECIES | SPECIFIC NOTES; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|---|--------------------------------|-------|
| <i>HYALOMMA</i> | ---; 162, 345 | Yakimoff | 1922 |
| <i>phipiccephaloides</i> Neumann | ---; 342 | Schulze | 1919 |
| <i>rufipes</i> Koch | ---; 162, 256. Mountain pastures; 303. ---; 317, 332, 342. Deserts; 345 | Hoogstraal | 1956 |
| <i>amignyi</i> (Gervais) | ---; 28, 35, 118, 150, 166, 256, 321, 326, 350. June-Aug.; 162. Mar.-Nov.; 345 | Anastos | 1957 |
| | ---; 154 | Feldman- Muehsam | 1948 |
| | Aug.; 303 | Galuzo | 1935 |
| | ---; 342° | Bodenheimer | 1937 |
| | ---; 342 | Adler & Feldman- Muehsam | 1948 |
| <i>amignyi</i> <i>armeniorum</i> Schulze | ---; 28 | Lototskii & Popov | 1934 |
| | ---; 162 | Olenev | 1930 |
| <i>schulzei</i> Olenev | ---; 3, 151, 342 | Hoogstraal | 1956 |
| | Jan., May; 150 | Anastos | 1957 |
| | ---; 159 | Schulze | 1936 |
| | ---; 342° | Bodenheimer | 1937 |
| <i>scupesae</i> Schulze | ---; 162, 254, 321 | Pomerantzev | 1946 |
| | ---; 345 | Markov et al. | 1948 |
| <i>steineri</i> Schulze & Gossel | ---; 317 | Schulze | 1936b |
| <i>syriacum</i> Koch | ---; 154 | Buxton | 1924 |
| | ---; 162, 326, 345 | Yakimoff | 1917 |
| | Steppes; 256, 317 | Vogel | 1927 |
| | ---; 342 | Smith | 1931 |
| <i>triviatum</i> Koch | ---; 332 (Vector of Tick paralysis and <i>Coxiella burnetii</i>) | Hoogstraal | 1956 |
| <i>tunesiacum</i> Schulze & Schlottke | ---; 342° | Bodenheimer | 1937 |

TABLE 1 - TICKS (continued)

| SPECIES | SPECIFIC NOTES; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|--|------------------------|-------|
| <i>HYALOMMA</i> <i>turanicum</i> Pomerantzev | ---; 3, 31, 150. In meadows, semi-deserts, low areas of fields, at the base of hills, on mountain slopes to the wooded belts, March-May; 162, 256 | Hoogstraal | 1956 |
| <i>turkmenienae</i> Olenev | ---; 256 | Markov et al. | 1948 |
| <i>uralense</i> Schulze & Schlottke | Jan.-May; 162, 256 | Sassuchin | 1933 |
| <i>verae</i> Olenev | ---; 256 | Anonymous | 1945 |
| | ---; 353 | Hsiao | 1945 |
| <i>volgensae</i> Schulze & Schlottke | ---; 162 | Sassuchin | 1935 |
| | Experimentally infected with plague; 256 | Borzenkov & Donskov | 1933 |
| | ---; 321 | Pogorely | 1936 |
| <i>watkenaeerii</i> Gervais | ---; 190 | Bequaert | 1933 |
| <i>yakimovi</i> <i>persianum</i> Olenev | ---; 318 | Olenev | 1931 |
| <i>INDOCENTOR</i> <i>auratus</i> Supino | Common; 59°. ---; 146 | Schulze | 1939 |
| | ---; 59, 143, 149 | Schulze | 1933a |
| <i>auratus</i> <i>sumatranus</i> Schulze | ---; 149 | Schulze | 1939 |
| <i>bellulus</i> Schulze | ---; 77 | Schulze | 1935 |
| <i>compactus</i> Neumann | ---; 143, 145, 146 | Schulze | 1933a |
| <i>compactus</i> <i>compactus</i> Neumann | ---; 145 | Schulze | 1933a |
| <i>compactus</i> <i>tricuspis</i> Schulze | ---; 242 | Kohls | 1950 |
| <i>confractus</i> Schulze | ---; 146 | Schulze | 1933a |
| <i>steini</i> <i>levicululus</i> Schulze | ---; 146, 149 | Schulze | 1933a |

TABLE 1 - TICKS (continued)

| SPECIES | SPECIFIC NOTES; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|--|-----------------------|-------|
| <i>IXODES</i> | | | |
| <i>acuminatus</i> Neumann | ---; 168 | Barnett & Toshioka | 1951 |
| <i>acutitarsus</i> (Karch) | ---; 31° | Sharif | 1938 |
| | Apr.; 59°. ---; 76, 77, 143 (On man). ---; 158 | Schulze | 1939 |
| | ---; 59 (On man) | Hsiao | 1945 |
| | ---; 76 | Sen | 1938 |
| | ---; 143°, 158° | Schulze | 1935 |
| <i>angulatus</i> Kishida | ---; 76 | Hsiao | 1945 |
| | ---; 170 | Anastos | 1957 |
| | ---; 194 | Anonymous | 1946 |
| <i>angustus</i> Neumann | ---; 256 | Anastos | 1957 |
| <i>apronophorus</i> Schulze | Apr.-Oct.; 162 | Golov | 1933 |
| | Forest; 256 | Karpov et al. | 1960 |
| <i>arboricola</i> <i>bogatschevi</i> Kirschenblatt | August; 345 | Anastos | 1957 |
| <i>arcticus</i> Osborn | ---; 47 | Yakimoff | 1922 |
| | ---; 256 | Yakimoff | 1917 |
| <i>areolaris</i> Olenev | ---; 161, 256 | Olenev | 1939 |
| <i>arenicola</i> Eichwald | ---; 256 | Yakimoff | 1917 |
| | ---; 354 | Yakimoff | 1922 |
| <i>autumnalis</i> Leach | ---; 31, 162, 353 | Hsiao | 1945 |
| | ---; 194 | Hsiao | 1946 |
| | ---; 207, 321 | Anastos | 1957 |
| | Naturally infected with plague; 256 | Pavlovskii | 1931a |
| <i>berlessei</i> Birula | ---; 256, 303 | Anastos | 1957 |
| | Rivershore; 294 | Yakimoff | 1917 |
| <i>birulai</i> Yakimoff, Saikovich & Vasilievskaya | ---; 256 | Anastos | 1957 |

TABLE 1 - TICKS (continued)

| SPECIES | SPECIFIC NOTES; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|---|----------------------------|-------|
| <i>IXODES</i> | | | |
| <i>brunneus</i> Koch | ---; 150, 158, 321 | Nuttall | 1916 |
| <i>canisuga</i> Johnston | ---; 150 | Nuttall | 1916 |
| | ---; 256 | Anastos | 1957 |
| | ---; 342 | Bodenheimer | 1937 |
| <i>ceylonensis</i> Kohls | ---; 70 | Kohls | 1950a |
| <i>cordifer</i> Neumann | ---; 145, 147 | Farner | 1943 |
| | ---; 337 | Toumanoff | 1944 |
| <i>coreensis</i> Kishida | ---; 168 | Barnett & Toshioka | 1951 |
| <i>corniger</i> Kol. | ---; 317 | Stefko | 1917 |
| | ---; 345 | Yakimoff | 1922 |
| <i>orenlavus</i> Koch | ---; 35, 118, 166, 207, 256, 303, 321, 345, 353 | Anastos | 1957 |
| | Xerophilous steppe; 256 | Dubinin | 1948 |
| <i>sinensicoxalis</i> Kirschenblatt | In rodent nest; 345 | Kirschenblatt | 1935 |
| <i>elephantinus</i> Fabricius | ---; 190 | Bequaert | 1933 |
| <i>frequens</i> Ogura & Takada | ---; 158° | Ogura & Takada | 1927 |
| | ---; 158 | Schulze | 1930 |
| <i>frontalis</i> (Panzer) | ---; 118, 256, 321, 345 | Anastos | 1957 |
| <i>gigas</i> Warburton | In jungle, 7000-8000 feet elevation; 76°. ---; 143 | Nuttall | 1916 |
| <i>granulatus</i> Supino | Mar.; 59 | Schulze | 1939 |
| | ---; 143, 145, 146, 242, 337 | Anastos | 1950 |
| | Oct.; 149 | Warburton | 1926b |
| <i>hexagonus</i> Leach | ---; 77 | Sugimoto | 1936 |
| | ---; 256 | Tikhomerova & Nikanorov | 1930 |

TABLE 1 - TICKS (continued)

| SPECIES | SPECIFIC NOTES; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|---|----------------------|------|
| <i>IXODES</i> | | | |
| <i>hirsutus</i> Birula | ---; 256 | Yakimoff | 1917 |
| <i>holocyclus</i> Neumann | ---; 143° | Fielding | 1926 |
| | ---; 143 | Sharif | 1938 |
| | ---; 147 | Krijgsman & Ponto | 1931 |
| | ---; 337 | Toumanoff | 1944 |
| <i>japonensis</i> Neumann | Jungle, 6000-8000 feet elevation; 59. ---; 76. 5400-7000 feet elevation; 158 | Nuttall | 1916 |
| | ---; 143 | Hsiao | 1945 |
| <i>kazakstani</i> Olenev & Sorokoumov | ---; 162, 166 | Anastos | 1957 |
| <i>kempi</i> Nuttall | ---; 143 | Nuttall | 1916 |
| <i>laguri</i> <i>armeniacus</i> Pomerantzev & Kirschenblatt | ---; 28 | Anastos | 1957 |
| <i>laguri</i> <i>oolohious</i> Pomerantzev | ---; 256 | Pomerantzev | 1946 |
| <i>laguri</i> <i>laguri</i> Olenev | ---; 35. Suspected vector of tularemia; 162, 256, 321 | Anastos | 1957 |
| <i>mindanensis</i> Kohls | ---; 242 | Kohls | 1950 |
| <i>muniaoi</i> Schulze | April; 59 | Schulze | 1939 |
| <i>nitens</i> Neumann | ---; 78 | Toumanoff | 1944 |
| <i>nuttalianus</i> Schulze | ---; 76 | Hsiao | 1945 |
| <i>occultus</i> Pomerantzev | ---; 318 | Anastos | 1957 |
| <i>ovatus</i> Neumann | ---; 158, 256, 345 | Anastos | 1957 |

TABLE 1 - TICKS (continued)

| SPECIES | SPECIFIC NOTES; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|--|---------------|-------|
| <i>IXODES</i> | | | |
| <i>pavlovskii</i> Pomerantsev | ---; 256 | Anastos | 1957 |
| <i>persulcatus</i> Schulze | ---; 158*, 194*, 256* | Kitaoka | 1950 |
| | ---; 162, 166, 170 | Anastos | 1957 |
| | Mixed forests, steppes; 256. ---; 294 | Schulze | 1936 |
| | Forest zones; 256 | Pletsity | 1947 |
| | Has been demonstrated as the vector of the tick-borne encephalitis; 256 | Hsiao | 1946 |
| | Apr.-Dec., peak May-June; 256° | Karpov et al. | 1960 |
| | June and July; 256 | Chumakov | 1941 |
| | ---; 256* | Hsiao | 1945 |
| | ---; 256° | Anonymous | 1944a |
| <i>persulcatus</i> <i>diversipalpis</i> Schulze | ---; 256 | Schulze | 1930 |
| <i>persulcatus</i> <i>persulcatus</i> Schulze | ---; 256 | Schulze | 1930 |
| <i>petauristas</i> Warburton | ---; 70 | Thompson | 1938 |
| <i>plumbeus</i> Leach | ---; 162 | Anastos | 1957 |
| <i>pomerantzevi</i> Serdikova | ---; 256 | Anastos | 1957 |
| <i>praematurus</i> Schulze | ---; 146 | Anastos | 1950 |
| <i>putus</i> (Richard-Cambridge) | ---; 77 | Muttall | 1916 |
| | ---; 256° | Pavlovskii | 1947 |
| <i>radfordia</i> Kohls | ---; 143 | Kohls | 1950 |
| <i>redikorzevi</i> Olenev | ---; 35, 118, 256, 303, 345 | Anastos | 1957 |
| | ---; 342 | Olenev | 1931 |
| <i>redikorzevi</i> <i>emberisae</i> Pomerantsev | ---; 35, 303 | Anastos | 1957 |

TABLE 1 - TICKS (continued)

| SPECIES | SPECIFIC NOTES; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|-----------------------|-------|
| <i>IXODES</i> | | | |
| <i>redikoraevi</i> <i>laguri</i> Olenev | ---; 162 | Olenev | 1930 |
| <i>redikoraevi</i> var. <i>lagurae</i> Olenev | ---; 256 | Sassuchin & Tiflow | 1933 |
| <i>reduvius</i> (Linnaeus) | ---; 101, 162, 180, 256, 345 | Yakimoff | 1922 |
| | ---; 32 | Yakimoff | 1917 |
| <i>ricinoides</i> Nuttall | ---; 76 | Nuttall | 1916 |
| <i>ricinus</i> (Linnaeus) | ---; 25*, 31 | Toumanoff | 1944 |
| | ---; 28 | Lotoskii & Popov | 1934 |
| | ---; 35, 76, 118, 161, 162, 173, 180, 207, 303, 321, 350 | Anastos | 1957 |
| | ---; 77 | Suginoto | 1936 |
| | ---; 101, 294 | Schulze | 1936 |
| | ---; 143 | Sharif. | 1938 |
| | ---; 158, 235, 256, 345 | Nuttall | 1916 |
| | ---; 158° | Ogura & Takada | 1927 |
| | ---; 162° | Pavlovskii & Stein | 1927 |
| | Reportedly a vector of Russian spring- summer encephalitis; 168° | Barnett & Toshioka | 1951 |
| | ---; 194 | Heiao | 1946 |
| | Infected with or actually transmitting Russian spring-summer encephalitis, louping-ill virus and <i>Pasteurella</i> <i>tularensis</i> ; 256° | Thompson | 1964 |
| | Naturally infected with encephalitis; 256 | Chumakov | 1941 |
| | ---; 256° | Olenev | 1929a |
| | Possibly vector of tick paralysis; 317 | Anonymous | 1944 |
| | ---; 326 | Olenev | 1930 |
| | ---; 342 | Bodenheimer | 1937 |

TABLE 1 - TICKS (continued)

| SPECIES | SPECIFIC NOTES; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|-----------------------|--|-------------|-------|
| <i>IXODES</i> | | | |
| <i>ricinus</i> | | | |
| <i>gibbosus</i> | ---; 317 | Nuttall | 1916 |
| Nuttall | | | |
| <i>ricinus</i> | ---; 158 | Toumanoff | 1944 |
| <i>ovatus</i> | | | |
| Neumann | ---; 194, 256 | Olenev | 1929a |
| <i>semenovi</i> | ---; 162 | Anastos | 1957 |
| Olenev | ---; 256 | Olenev | 1930 |
| <i>shinohikvensis</i> | ---; 77 | Sugimoto | 1937 |
| Sugimoto | | | |
| <i>signatus</i> | ---; 158, 256 | Anastos | 1957 |
| Birula | | | |
| <i>simplex</i> | ---; 76 | Hsiao | 1945 |
| Neumann | | | |
| <i>simplex</i> | | | |
| <i>simplex</i> | ---; 76, 158, 342 | Hoogstraal | 1956 |
| Neumann | | | |
| <i>spinicoxalis</i> | ---; 146 | Anastos | 1950 |
| Neumann | May; 149 | Warburton | 1926b |
| | ---; 337 | Toumanoff | 1944 |
| | ---; 345 | Yakimoff | 1917 |
| <i>taiwanensis</i> | ---; 77 | Sugimoto | 1936 |
| Sugimoto | | | |
| <i>theodori</i> | ---; 342* | Bodenheimer | 1937 |
| Warburton | | | |
| <i>trianguliceps</i> | ---; 118, 161, 256, 321, 345 | Anastos | 1957 |
| Birula | ---; 294 | Yakimoff | 1917 |
| <i>urias</i> | ---; 118, 170, 256 | Anastos | 1957 |
| White | | | |
| <i>vespertilionis</i> | ---; 28, 150, 256, 318, 321 | Anastos | 1957 |
| Koch | ---; 143 | Roy & Brown | 1957 |
| | ---; 158, 317, 342 | Hoogstraal | 1956 |
| <i>burneri</i> | ---; 190, 242 | Kohls | 1950 |
| Kohls | | | |

TABLE 1 - TICKS (continued)

| SPECIES | SPECIFIC NOTES; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|--|-----------------------|------|
| <i>MARGAROPUS</i> | ---; 77 | Neumann | 1913 |
| <i>annulatus</i> (Say) | ---; 317 | Stefko | 1917 |
| | ---; 345 | Yakimoff | 1917 |
| <i>annulatus</i> var. <i>australis</i> (Fuller) | ---; 77 | Sugimoto | 1936 |
| | Apr.; 144 | Larrousse | 1925 |
| | ---; 145, 149, 280 | Howard | 1908 |
| <i>annulatus</i> <i>calcaratus</i> (Birula) | ---; 162, 318, 326, 345 | Yakimoff | 1917 |
| | ---; 256 | Yakimoff | 1922 |
| <i>australis</i> Fuller | ---; 242 | Banks | 1919 |
| <i>NOSOMMA</i> | ---; 143, 366 | Sharif | 1938 |
| <i>monstrosum</i> (Nuttall & Warburton) | ---; 144 | Toumanoff | 1944 |
| | ---; 235 | Sen | 1938 |
| <i>ORNITHODOROS</i> | Nymph found in rodent burrows, experimental transmission of <i>Spirochasta</i> <i>babylonensis</i> ; 151 | Brumpt | 1939 |
| <i>asperus</i> Warburton | ---; 151* | Weyer & Zumpt | 1952 |
| <i>batuensis</i> Hirst | ---; 190 | Kohls | 1950 |
| <i>canestrinii</i> Birula | ---; 35, 150, 162, 345 | Anastos | 1957 |
| | ---; 317 | Pavlovskii | 1948 |
| <i>capestrini</i> Laboulbène & Magnin | ---; 345 | Yakimoff | 1917 |
| <i>chołodkovskii</i> Pavlovskii | ---; 31, 162, 318*, 326 | Anastos | 1957 |
| <i>coniceps</i> (Canestrini) | ---; 59. In wall crevices; 342* | Theodor | 1932 |
| | ---; 162 | Olenov | 1930 |
| | ---; 256 | Hoogstraal | 1956 |
| | Hill country; 342 | Bodenheimer | 1934 |
| <i>ocriaceus</i> Koch | ---; 162* | Pavlovskii & Stein | 1927 |

TABLE 1 - TICKS (continued)

| SPECIES | SPECIFIC NOTES; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--------------------------------------|--|----------------------------|-------|
| <i>ORNITHODOROS</i> <i>crossi</i> | ---; 143 | Cross & Patel | 1922 |
| | In houses, stables, Dec.-Feb.; 235* | Rao & Kaira | 1949 |
| <i>erraticus</i> Lucas | ---; 150 | Hoogstraal | 1956 |
| | ---; 317 | Leeson | 1956 |
| <i>lahorensis</i> Neumann | ---; 28, 31, 35, 76, 150°, 166, 256, 318, 345, 350. Dec.-Mar.; 162. Dec.-Feb.; 303. Dec.-Apr.; 326 | Anastos | 1957 |
| | ---; 143, 235, 342. Possible carrier of relapsing fever; 317 | Roy & Brown | 1954 |
| | In houses, stables; 150 | Delpy | 1947 |
| | ---; 154. May; 159 | Theodor | 1932 |
| | ---; 162* | Andreev | 1944 |
| | In cracks of walls and beams, May, July-Sept.; 317 | Vogel | 1926 |
| | Possible vector of tick fever and tularemia; 317 | Anonymous | 1944 |
| | Experimentally infected with tularemia; 317 | Server, Kamil & Sait Bilal | 1938 |
| | Experimentally infected with Q. fever; 317 | Payzin | 1948 |
| | Dec.-Feb.; 326 | Sofiev | 1929 |
| <i>magnini</i> (Duges) | ---; 77 | Sugimoto | 1936a |
| | ---; 143 | Roy & Brown | 1954 |
| <i>miana</i> Starobynski | ---; 150* | Starobynski | 1922 |
| <i>moubata</i> (Murray) | ---; 76 | Brumpt | 1936 |
| | ---; 162° | Pavlovskii & Stein | 1927 |
| | ---; 256 | Mironov et al. | 1940 |
| <i>nereensis</i> Pavlovskii | ---; 256 | Compano-Rouget | 1959 |
| | Shallow burrows and crevices of clay stone huts, upturned stones, experimental transmission of sprochaetes; 318* | Pavlovskii | 1941 |
| | Suspected vector of relapsing fever; 318 | Anastos | 1957 |

TABLE 1 - TICKS (continued)

| SPECIES | SPECIFIC NOTES; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|--|--------------------|-------|
| <i>ORNITHODOROS</i> <i>papillipes</i> Birula | In houses; 31. ---; 143, 150, 162, 235, 302, 326, 345. In caves; 166, 342 | Roy & Brown | 1954 |
| | ---; 76 | Hoepli & Feng | 1933 |
| | Experimentally infected with typhus; 150°, 317 | Pavlovskii | 1948 |
| | In caves, naturally and experimentally infected with relapsing fever; 154*° | Adler et al. | 1937 |
| | ---; 159* | Anonymous | 1944b |
| | In houses; 162*° | Pavlovskii | 1930 |
| | ---; 166 | Pavlovskii | 1931 |
| | ---; 302* | Anonymous | 1944 |
| | ---; 303° | Sosnina | 1949 |
| | In caves; 303 | Chodukin & Sofief | 1931 |
| | In grotto-like cave, shallow burrows and crevices of clay, stone huts and upturned stones; 318* | Pavlovskii | 1941 |
| | ---; 326 | Sofief | 1929 |
| <i>salahi</i> Hoogstraal | ---; 154 | Leeson | 1956 |
| | ---; 342 | Hoogstraal | 1956 |
| <i>savignyi</i> Audouin | ---; 2, 70, 143, 332, 342 (In sandy soil, corrals, under trees where man and animals rest, well sides, in houses, bites man) | Hoogstraal | 1956 |
| | Occasionally bites man; 143° | Roy & Brown | 1954 |
| | ---; 256° | King | 1926 |
| <i>severus</i> | ---; 151 | Pavlovskii | 1948 |
| <i>talajae</i> Guerin & Meneville | ---; 150, 162° | Pavlovskii & Stein | 1927 |
| | ---; 256. On lake shores; 294 | Yakimoff | 1917 |
| <i>tartakovskyi</i> Olenev | ---; 162°. In burrows; 318, 326 (Naturally and experimentally infected with relapsing fever) | Anastos | 1957 |
| | ---; 256 | Sassuchin et al. | 1935 |
| | In turtle holes, carrier and vector of spirochaetes; 318* | Pavlovskii | 1941 |

TABLE 1 - TICKS (continued)

| SPECIES | SPECIFIC NOTES; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|---------------------|------|
| <i>ORNITHODOROS</i> <i>tartakovskyi</i> Olenev (cont.) | Naturally infected with relapsing fever; 326 | Sofief | 1941 |
| <i>tholozani</i> (Laboulbene & Megnin) | ---; 3, 35, 151, 303, 345°, 354. In houses, winter; 150°. In houses; 162, 326°. In cave and burrows; 318 | Anastos | 1957 |
| | ---; 76 | Hoepli & Feng | 1933 |
| | ---; 118, 150, 151, 159, 174, 317. Grottos, naturally infected and experimental transmission of <i>Borellia persica</i> ; 154. In houses; 235. In houses, experimentally infected with <i>Spirochaeta</i> ; 294 | Davis & Hoogstraal | 1956 |
| | In houses, stables; 150 | Delpy | 1947 |
| | June-Aug.; 162 | Skopin | 1944 |
| | ---; 166* | Naumov & Mezentzeva | 1942 |
| | Enters houses; 256 | Pospelova & Schtrom | 1944 |
| | ---; 302* | Sautet | 1941 |
| | ---; 318* | Pavlovskii | 1945 |
| | ---; 342 | Bodenheimer | 1937 |
| | ---; 345 | Yakimoff | 1922 |
| <i>tholozani</i> var. <i>peresepdiensis</i> Delpy | ---; 150 | Delpy | 1947 |
| <i>tholozani</i> <i>tholozani</i> Laboulbene & Megnin | ---; 150, 159 | Hoogstraal | 1956 |
| <i>turicata</i> (Duges) | Experimentally infected with typhus rickettsiae; 76 | Liu | 1944 |
| | ---; 162° | Pavlovskii & Stein | 1927 |

TABLE 1 - TICKS (continued)

| SPECIES | SPECIFIC NOTES; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|--|-------------------------|-------|
| <i>ORNITHODOROS</i> <i>verrucosus</i> Olenev, Sassuchin & Fenynk | Naturally infected and experimental transmission of relapsing fever; 35 | Popov & Akhundov | 1940 |
| | In burrows; 35. In burrows and caves; 162°. ---; 345 | Anastos | 1957 |
| | ---; 256° | Olenev et al. | 1934 |
| | ---; 345° | Olenev et al. | 1934 |
| <i>PALPOBOOPHILUS</i> <i>decoloratus</i> (Koch) | ---; 168° | Barnett & Toshioka | 1951 |
| <i>minningi</i> Kishida | ---; 168 | Barnett & Toshioka | 1951 |
| <i>RHIPICEPHALUS</i> <i>bursa</i> Canestrini & Fanzago | ---; 28, 31, 35, 118, 162, 318, 321, 345 | Anastos | 1957 |
| | ---; 150 | Roy & Brown | 1954 |
| | Mar.-Sept.; 256 | Kurchatov | 1940 |
| | ---; 317 | Lestoquard & Ekram | 1931 |
| | ---; 342 | Bodenheimer | 1937 |
| <i>calcaratus</i> Birula | ---; 345 | Yakimoff | 1917 |
| <i>evertsi</i> Neumann | ---; 251 | King | 1926 |
| <i>evertsi</i> <i>evertsi</i> Neumann | ---; 332 | Hoogstraal | 1956 |
| <i>haemaphysaloides</i> Supino | ---; 59 | Schulze | 1939 |
| | ---; 70 | Warburton | 1925 |
| | ---; 76° | Haiao | 1945 |
| | In houses; 143°. ---; 235 | Sen | 1938 |
| | Suspected vector of tick typhus fever; 143, 149 | Sharif | 1938 |
| | Nov.; 143 | Sharif | 1930a |
| | ---; 144° | Toumanoff | 1944 |
| | ---; 145, 149 | Farner | 1943 |
| | ---; 146 | Schuermans Stekhoven | 1923 |
| | ---; 256, 353 | Wu Lien Teh | 1923 |

TABLE 1 - TICKS (continued)

| SPECIES | SPECIFIC NOTES; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|---|--|---|
| <i>RHIPICEPHALUS</i> | | | |
| <i>haemaphysaloides</i> <i>expeditus</i> Neumann | ---; 76, 149 | Hsiao | 1945 |
| <i>haemaphysaloides</i> <i>haemaphysaloides</i> Supino | ---; 59, 70, 76, 77, 143, 144, 149 | Anastos | 1950 |
| <i>haemaphysaloides</i> <i>paulopunctatus</i> Neumann | ---; 149 | Schulze | 1936 |
| <i>haemaphysaloides</i> <i>pilans</i> Schulze | Bamboo woods; 145 ---; 146, 149, 242 | Schulze Anastos | 1936 1950 |
| | ---; 337 | Kohls | 1950 |
| <i>intermedius</i> Neumann | ---; 149 | Farner | 1943 |
| <i>leporis</i> Pomerantzev | ---; 326 | Pomerantzev | 1946 |
| <i>macropis</i> Schulze | ---; 2 | Schulze | 1936 |
| <i>pilans</i> Schulze | Small bamboo forests, June and July; 146 | Schulze | 1936 |
| <i>pumilio</i> Schulze | ---; 294 | Zumt | 1939 |
| <i>rossicus</i> Yakimoff & Kohl- Yakimoff | ---; 28, 35, 118, 256, 318, 321. June-Aug.; 162. Apr.-Sept.; 345 In dense grassy river edges; 321° May-Sept., seldom on man; 321 | Anastos Kulikoff Kolomietz | 1957 1935 1936 |
| <i>sanguineus</i> (Latreille) | ---; 28, 31, 35, 76, 118, 151, 162, 256, 303, 317, 321, 326. March-Sept.; 345 ---; 59 ---; 70 ---; 76° ---; 77 Possible vector of tick typhus fever; 143 Aug.-Sept.; 143 | Anastos Wilcocks Warburton Hsiao Neumann Sharif Sharif | 1957 1944 1925 1945 1913 1938 1930a |

TABLE 1 - TICKS (continued)

| SPECIES | SPECIFIC NOTES; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|--|--------------------|--------------|
| <i>RHIPICEPHALUS sanguineus</i> (Latreille) (cont.) | ---; 143° | Strickland | 1939 |
| | Apr.; 144 | Larrousse | 1925 |
| | ---; 144° | Toumanoff | 1944 |
| | ---; 145, 146, 147, 149 | Anastos | 1950 |
| | Experimental transmission of Rocky Mountain Spotted Fever; 146° | Krijgsman & Ponto | 1931 |
| | ---; 150, 174, 270, 280 | Howard | 1908 |
| | ---; 154, 159 | Euxton | 1924 |
| | Experimentally infected with <i>Trypanosoma christophersi</i> , <i>Crithidia</i> , <i>Leishmania</i> parasite; 157 | Brumpt | 1936 |
| | Possible vector of "Q" fever, tularemia, Rocky Mountain spotted fever, and relapsing fever; 168° | Barnett & Toshioka | 1951 |
| | ---; 190 | Lewthwaite et al. | 1935 |
| | ---; 194 | Hsiao | 1946 |
| | ---; 235 | Sen | 1938 |
| | ---; 242 | Kohls | 1950 |
| | ---; 251 | King | 1926 |
| | ---; 256* | Pletzity | 1947 |
| | ---; 256° | Pomerantsev | 1946 |
| | ---; 318 | Povov & Lotoskii | 1932 |
| | ---; 332° | Hoogstraal | 1956 |
| | ---; 342 | Bodenheimer | 1937 |
| <i>sanguineus rossicus</i> Yakimoff & Kohl-Yakimova | ---; 162, 207 Feb.-Nov.; 256 | Zumpt Kurchatov | 1939 1940 |
| <i>sanguineus sanguineus</i> (Latreille) | ---; 2°, 143, 151, 235, 242, 256, 270, 317°. Mountains and lowlands; 332°, 342 | Hoogstraal | 1956 |
| | ---; 303, 326, 345 | Zumpt | 1939 |

TABLE 1 - TICKS (conclusion)

| SPECIES | SPECIFIC NOTES; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|----------------------|--|-------------|-------|
| <i>RHIPICEPHALUS</i> | ---; 35, 166, 303, 318, 324, 345 | Anastos | 1957 |
| <i>schulzei</i> | | | |
| Olenev | May-Aug.; 162° | Kolpakova | 1931 |
| | Naturally infected with plague; 256 | Pavlovskii | 1931a |
| <i>simus</i> | ---; 145 | Howard | 1908 |
| Koch | ---; 162 | Yakimoff | 1917 |
| | ---; 317 | Stefko | 1917 |
| <i>simus</i> | ---; 76, 326 | Yakimoff | 1917 |
| <i>simus</i> | | | |
| Koch | Mountains; 332 | Hoogstraal | 1956 |
| <i>turanicus</i> | ---; 150, 162 | Pomerantzev | 1946 |
| Pomerantzev | ---; 345 | Lagereva | 1946 |
| <i>UROBOOPHILUS</i> | | | |
| <i>caudatus</i> | ---; 76, 158 | Hsiao | 1945 |
| (Neumann) | | | |
| <i>distans</i> | ---; 76, 77, 139, 144 | Hsiao | 1945 |
| Minning | | | |
| <i>indicus</i> | ---; 143 | Minning | 1936 |
| Minning | | | |
| <i>occidentalis</i> | ---; 150 | Minning | 1936 |
| Minning | | | |
| <i>sharifi</i> | ---; 59 | Schulze | 1939 |
| Minning | | | |
| <i>sinensis</i> | ---; 76, 77, 139, 158 | Minning | 1934 |
| Minning | | | |

TABLE 2 - SUMMARY OF DISEASES OR DISEASE ORGANISMS TRANSMITTED BY TICKS

| SPECIES | DISEASE OR DISEASE ORGANISM | | | | | COUNTRY |
|---|---|----------|-----------|-----------------|--|----------------------|
| | VIRUS & RICKETTSIA | PROTOZOA | HELMINTHS | OTHER | | |
| <i>DERMACENTOR marginatus</i> (Sulzer) | Encephalitis | | | | | 256 |
| <i>nuttalli</i> Olenev | Atypical typhus | | | | | 256 (Pletzity, 1947) |
| | Spotted fever | | | | | 256 |
| <i>pictus</i> Hermann | Encephalitis | | | | | 256 |
| <i>silvarum</i> Olenev | Atypical typhus | | | | | 256 |
| | Tick-borne typhus | | | | | 353 |
| | Tick-borne encephalitis | | | | | |
| <i>HAEMAPHYSALIS concinna</i> Koch | Tick-borne typhus fever & Tick-borne encephalitis | | | | | 194 |
| | Atypical typhus | | | | | 256 (Pletzity, 1947) |
| | Encephalitis | | | | | 256 |
| <i>HYALOMMA marginatum</i> Koch | Crimean hemorrhagic fever | | | | | 256 |
| <i>IXODES persulcatus</i> Schulze | Russian spring-summer encephalitis | | | | | 158, 194, 256 |
| | Tick-borne encephalitis | | | | | 256 (Hsiao, 1945) |
| <i>ricinus</i> (Linnaeus) | | | | Tick paralysis | | 25 |
| | Russian spring-summer encephalitis | | | | | 256 |
| <i>ORNITHODOROS asperus</i> Warburton | | | | Relapsing fever | | 151 |
| <i>rossi</i> | | | | Relapsing fever | | 235 |
| <i>lahorensis</i> Neumann | | | | Relapsing fever | | 162 |

TABLE 2 - TICKS (conclusion)

| SPECIES | DISEASE OR DISEASE ORGANISM | | | | | COUNTRY |
|--|-----------------------------|----------|-----------|--------------------|--|---------|
| | VIRUS & RICKETTSIA | PROTOZOA | HELMINTHS | OTHER | | |
| <i>ORNITHODOROS</i> <i>miana</i> Starobyński | | | | Relapsing fever | | 150 |
| <i>nereensis</i> Pavlovskii | | | | Relapsing fever | | 318 |
| <i>papillipes</i> Birula | | | | Relapsing fever | | 154 |
| | | | | Relapsing fever | | 159 |
| | | | | Relapsing fever | | 162 |
| | | | | Relapsing fever | | 302 |
| | | | | Relapsing fever | | 318 |
| <i>tartakovskyi</i> Olenev | | | | Relapsing fever | | 318 |
| <i>tholonani</i> Laboulbène & Megnin | | | | Relapsing fever | | 166 |
| | | | | Relapsing fever | | 302 |
| | | | | Relapsing fever | | 318 |
| <i>RHIPICEPHALUS</i> <i>sanguineus</i> (Latreille) | Marseille fever | | | | | 256 |

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L. MITES

The entries for mites include a wide variety of species, most of which seldom bite man. For the most part, there are no biological entries. The Trombiculid entries are, of course, for larval stages. Most of the others will be for various stages, but mostly for adults.

There are 134 species or subspecies recorded in the tables.

TABLE 1 - MITES

| SPECIES | SPECIFIC NOTES; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|---|------------------------------------|----------------------|
| <i>ACOMATACARUS</i> <i>australiensis</i> (Hirst) | ---; 145 (On man, vector of dermatitis) | Wharton & Fuller | 1952 |
| <i>ALEUROBIUS</i> <i>farinae</i> De Geer | ---; 77° | Sugimoto | 1940 |
| <i>BDELLONYSSUS</i> <i>bursa</i> (Berlese) | Naturally infected with Sindbis virus; 143 | Shah et al. | 1960 |
| <i>CARPOGLYPHUS</i> <i>taiwanensis</i> Sugimoto | ---; 77° | Sugimoto | 1940 |
| <i>DEMODEX</i> <i>folliculorum</i> Simon | Suspected cause of skin disease; 76 ---; 256° ---; 342° | Patton Anonymous Bodenheimer | 1926 1945 1937 |
| <i>DERMANYSSUS</i> <i>muris</i> Hirst | Capable of transmitting plague; 70° | Philip | 1923 |
| <i>DERMATOPHAGOIDES</i> <i>saitoi</i> (Sasa) | In sputum of patient with Loeffler's syndrome; 158 | Sasa | 1950 |
| <i>schermetewskyi</i> Bodganoff | ---; 158 ---; 256° | Sasa Sasa | 1951 1950 |
| <i>takeuchii</i> (Sasa) | In urine of patient with liver cirrhosis; 158 | Sasa | 1950 |
| <i>GLYCIPHAGUS</i> <i>domesticus</i> De Geer | May cause dermatitis; 70 ---; 77° | Castellani & Hirst Sugimoto | 1912 1940 |
| <i>LAELAPS</i> <i>jettmari</i> Vitzthum | ---; 158 (Attacks man). Associated with the transmissions of epidemic hemorrhagic fever; 194° | Barnett & Toshioka | 1951 |
| <i>LEIOGNATHUS</i> <i>morsitans</i> Hirst | ---; 143° | Hirst | 1915 |
| <i>LEPTUS</i> <i>akamushi</i> (Brumpt) | Causes severe fever; 158* | Banks | 1919 |

TABLE 1 - MITES (continued)

| SPECIES | SPECIFIC NOTES; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|---|--|--|
| <i>LEPTUS</i> <i>autumnalis</i> Gudden | ---; 76° Produce irritation and vesication; 76* | Feng & Hoeppli Patton | 1933 1926 |
| <i>LIPONYSSUS</i> <i>bacoti</i> Hirst | May transmit typhus from rat to man; 76 Naturally infected with typhus; 76 Possible vector of typhus; 143° Possible vector of murine typhus; 168° | Liu Liu Mehta Barnett & Toshioka | 1944 1947 1937 1951 |
| <i>nagayoi</i> Yamada | Experimental transmission of endemic typhus; 194 Experimental transmission of typhus rickettsiae; 76 Abundant in houses in Nov.-Dec.; 77° Enters houses, experimental transmission of plague, may cause dermatitis; 158° Experimental transmission of endemic typhus; 194 | Liu Liu Morishita & Omori Yamada Kodama & Kōno | 1947 1932 1931 1933 |
| <i>MICROTHROMBIDIUM</i> <i>wichmanni</i> (Oudemans) | Bite causes irritation; 147** | Ewing & Hartzell | 1918 |
| <i>NEOSCHÖNGASTIA</i> <i>kohlsi</i> (Philip & Woodward) | ---; 242° | Philip & Woodward | 1946 |
| <i>philippensis</i> (Philip & Woodward) | ---; 242° | Philip & Woodward | 1946 |
| <i>schuffneri</i> Walch | ---; 149° | Womersley & Heaslip | 1943 |
| <i>NOTOEDRES</i> <i>cati</i> Hering | ---; 321* | Chebotarev | 1937 |
| <i>PEDICULOIDES</i> <i>ventricosus</i> (Newport) | ---; 70* Causes cutaneous eruptions; 76* ---; 256* ---; 317* | Carter et al. Patton Rodionov Anonymous | 1944 1926 1940 1944 |

TABLE 1 - MITES (continued)

| SPECIES | SPECIFIC NOTES; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|--|------------------------|-------|
| <i>RHIZOGLYPHUS</i> <i>echinopus</i> Fumouze & Robin | ---; 256* | Rodionov | 1940 |
| <i>parasiticus</i> Dalgetty | ---; 70* | Castellani & Hirst | 1912 |
| <i>SARCOPTES</i> <i>scabiei</i> (De Geer) | Female burrows into the skin and lays its eggs there, causes secondary infections and eczematous conditions and scabies; 76* | Patton | 1926 |
| | Commonly invades the skin producing "scabies" in man, previously suspected vector of leprosy; 168* | Barnett & Toshioka | 1951 |
| | ---; 194* | Anonymous | 1946 |
| | ---; 256° | Anonymous | 1945 |
| | ---; 342° | Anonymous | 1944a |
| <i>scabiei</i> var. <i>canis</i> Gerlach | ---; 342° | Bodenheimer | 1937 |
| <i>scabiei</i> var. <i>hominis</i> Hering | ---; 342° | Bodenheimer | 1937 |
| <i>SCHÖNGASTIA</i> <i>schliffneri</i> (Walch) | ---; 149*, 190* | Williams | 1944 |
| | ---; 190, 337 (On man, vector of dermatitis) | Wharton & Fuller | 1952 |
| <i>vandersandei</i> (Oudemans) | ---; 337 (On man, vector of dermatitis) | Wharton & Fuller | 1952 |
| <i>TROMBICULA</i> <i>acuticellaris</i> Walch | ---; 59, 70, 149, 191, 242 (Host: man) | Wharton & Fuller | 1952 |
| | Dec.; 143° | Mehta | 1937 |
| | ---; 143* | Williams | 1944 |
| | ---; 143 | Mackie & others | 1946 |
| | ---; 149° | Farner | 1943 |
| | Aug.-Jan.; 190° | Womersley & Heaslip | 1943 |
| | Rice field; 190° | Gater | 1932 |

TABLE 1 - MITES (continued)

| SPECIES | SPECIFIC NOTES; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|--|------------------------|------|
| <i>TROMBICULA</i> <i>agamae</i> André | ---; 154 | Wharton & Fuller | 1952 |
| <i>akamushi</i> (Brumpt) | Active during early morning, vector of <i>Rickettsia orientalis</i> , grasslands, prefer river edges or land that is periodically flooded, on the ground or grass stems, flowers and bushes; 59, 70*, 77*, 143*, 144*, 149*, 158*, 168*, 190*, 277 | Geigy & Herbig | 1955 |
| | Adults on vegetables and organic matter, naturally infected and vector of Tsutsugamushi; 59*, 77*, 158*, 190*, 242* | Philip | 1948 |
| | Carrier of Japanese River fever; 76°, 77°, 149°, 158° | Patton | 1926 |
| | ---; 76, 77, 145, 168, 242. Silt covered fields on river banks; 158 | Roy & Brown | 1954 |
| | ---; 76* | Williams | 1944 |
| | Suspected vector of Japanese River fever or Tsutsugamushi disease, vector of <i>typhus</i> ; 77*, 158* | Womersley & Heaslip | 1943 |
| | Carrier of Tsutsugamushi virus; 77°, 158 | Hatori | 1919 |
| | ---; 143* | Mehta | 1937 |
| | ---; 144, 158 | Hsiao | 1945 |
| | ---; 146* | Giapen | 1950 |
| | ---; 149* | Williams | 1944 |
| | Vector of Japanese River fever; 158* | Mehta | 1948 |
| | ---; 158* | Philip et al. | 1946 |
| | Oct.-Jan., probable vector of Tsutsugamushi; 190° | Gater | 1932 |
| | ---; 190 | Kingsbury | 1930 |
| | ---; 242 | Philip et al. | 1946 |
| <i>akamushi</i> var. <i>deliensis</i> Walch | ---; 59, 70, 76, 143, 149, 190, 242 (On man) | Fuller | 1952 |

TABLE 1 - MITES (continued)

| SPECIES | SPECIFIC NOTES; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|--|------------------------|------|
| <i>TROMBICULA</i> <i>autumnalis</i> (Shaw) | ---; 77 | Miyashima & Okumura | 1919 |
| | ---; 158 | Hayashi et al. | 1926 |
| <i>batui</i> Philip & Traub | ---; 190 | Womersley | 1952 |
| <i>bhintalensis</i> Womersley | ---; 143 | Roy & Brown | 1954 |
| <i>bodensis</i> (Gunther) | June, Sept.-Oct.; 145 | Womersley | 1952 |
| | ---; 242 | Wharton & Fuller | 1952 |
| <i>butmensis</i> Ewing | June-July; 59 | Ewing | 1945 |
| | Sept.-Oct.; 143 | Womersley | 1952 |
| | ---; 235 | Wharton & Fuller | 1952 |
| <i>burnsi</i> Sasa, Teramura & Kanoh | ---; 158 | Wharton & Fuller | 1952 |
| <i>buxtoni</i> Womersley | ---; 143 | Womersley | 1952 |
| <i>cervulicola</i> Ewing | ---; 143 | Womersley | 1952 |
| <i>coluberina</i> (Radford) | ---; 143 | Womersley | 1952 |
| <i>consueta</i> Womersley | June; 190 | Womersley | 1952 |
| <i>corvi</i> Hatori | ---; 77 | Womersley & Heaslip | 1943 |
| <i>cuneata</i> (Traub & Evans) | ---; 59, 143 | Womersley | 1952 |
| <i>deliensis</i> Walch | Active during early morning, vector of <i>Rickettsia orientalis</i> , grasslands, prefer river edges or land that is periodically flooded, on the ground or grass stems, flowers and bushes; 59, 70*, 143*, 144*, 149*, 158*, 168*, 190*, 277 | Geigy & Herbig | 1955 |

TABLE 1 - MITES (continued)

| SPECIES | SPECIFIC NOTES; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|---------------------|------|
| <i>TROMBICULA deliensis</i> Walch (cont.) | Common, May-Nov., vector of Tsutsugamushi disease; 59*, 143* (Transmits <i>Rickettsia orientalis</i> to susceptible experimental animals, abundant monsoon season, attaches to man) | Mackie et al. | 1946 |
| | Naturally infected with Tsutsugamushi; 70*, 76*, 145*, 146*, 149*, 191* | Philip | 1948 |
| | Common; 70, 143, 145, 146, 190, 235 (Vector of scrub typhus) | Womersley | 1952 |
| | Suspected vector of Tsutsugamushi; 76 | Millsbaugh & Fuller | 1947 |
| | Dump scrub, humus soil, wild rats (<i>Rattus rattus</i>), experimental transmission of scrub typhus, Sept.-Nov.; 143 | Browning & Kalra | 1948 |
| | Suspected transmitter of tropical typhus; 143, 149 | Abdussalam | 1939 |
| | All year; 143 | Mehta | 1937 |
| | ---; 143° | Mehta | 1948 |
| | Probable vector of a "tsutsugamushi"-like fever; 149 | Womersley & Heaslip | 1943 |
| | Carrier of Tsutsugamushi; 158 | Lewthwaite et al. | 1935 |
| | Jan.-May, July-Dec.; 190 | Gater | 1932 |
| | ---; 190° | Mehta | 1948 |
| | ---; 190* | Williams | 1944 |
| | ---; 191 | Roy & Brown | 1954 |
| | ---; 235 (On man) | Wharton & Fuller | 1952 |
| <i>densipiliata</i> Walch | ---; 242 | Philip et al. | 1946 |
| | ---; 145 | Womersley | 1952 |
| | ---; 149 | Womersley & Heaslip | 1943 |
| <i>dux</i> Womersley | ---; 143, 235 | Womersley | 1952 |
| <i>fletcheri</i> Womersley & Heaslip | ---; 190 | Womersley & Heaslip | 1943 |

TABLE 1 - MITES (continued)

| SPECIES | SPECIFIC NOTES; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|--|--------------------------|------|
| <i>TROMBICULA</i> | | | |
| <i>foliacea</i> (Traub & Evans) | Feb.-March; 59 | Womersley | 1952 |
| <i>fordi</i> Womersley | Common; 59, 143 | Womersley | 1952 |
| <i>frittsi</i> Wharton | ---; 190 | Womersley | 1952 |
| <i>fuji</i> Kuwato, Berge & Philip | ---; 158 | Womersley | 1952 |
| <i>fujigmo</i> Philip & Fuller | March-April; 59 | Philip & Fuller | 1950 |
| <i>fulleri</i> (Ewing) | ---; 59 | Ewing | 1945 |
| <i>gallinarum</i> Hatori | ---; 77 | Sugimoto | 1936 |
| <i>gliricolens</i> (Hirst) | ---; 143, 242 | Womersley | 1952 |
| <i>gymnodaactyla</i> Ewing | Suspected vector of tropical typhus; 143 | Abdussalam | 1939 |
| <i>harrisoni</i> Womersley | ---; 190 | Womersley | 1952 |
| <i>hastata</i> Gater | May; 190 | Gater | 1932 |
| <i>hatorii</i> Womersley & Heaslip | ---; 77 | Womersley & Heaslip | 1943 |
| <i>hexasternalae</i> Vercammen- Grandjean | ---; 3 | Nadchatram & Mitchell | 1965 |
| <i>hirsti</i> Sambon | ---; 77, 149, 190, 242 (On man, vector of dermatitis) | Wharton & Fuller | 1952 |
| | ---; 146 | Womersley | 1952 |
| | All year; 190° | Gater | 1932 |
| <i>hirsti</i> form <i>hakei</i> Radford | ---; 143 | Womersley | 1952 |

TABLE 1 - MITES (continued)

| SPECIES | SPECIFIC NOTES; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|--|--------------------------|------|
| <i>TROMBICULA</i> <i>indica</i> | June-Nov.; 143 | Mehta | 1937 |
| <i>insolli</i> Philip & Traub | March; 190 | Womersley | 1952 |
| <i>intermedia</i> Nagayo, Mitamura & Tamiya | ---; 143, 158 | Womersley | 1952 |
| <i>irritants</i> Talice | ---; 76 | Feng | 1933 |
| <i>isshikii</i> Sugimoto | ---; 77 | Womersley & Heaslip | 1943 |
| <i>japonica</i> Kaiwa, Teramura & Kagaya | Sept.-Dec.; 158 | Philip & Fuller | 1950 |
| <i>jayewickremei</i> Womersley | ---; 70 | Womersley | 1952 |
| <i>jubbulporensis</i> Womersley | ---; 143 | Womersley | 1952 |
| <i>kansalwanensis</i> Womersley | Oct.; 235 | Womersley | 1952 |
| <i>kashmirensis</i> Womersley | July; 235 | Womersley | 1952 |
| <i>keukensohrijveri</i> Walch | ---; 143 (On man) | Wharton & Fuller | 1952 |
| | ---; 149°, 190° | Womersley | 1952 |
| <i>khurdangensis</i> Womersley | July; 235 | Womersley | 1952 |
| <i>kitasatoi</i> Fukuzumi & Obata | ---; 158 | Wharton & Fuller | 1952 |
| <i>koomori</i> Sasa & Jamason | ---; 158 | Nadchatram & Mitchell | 1965 |
| <i>kukongensis</i> Chen & Hsu | ---; 76 | Nadchatram & Mitchell | 1965 |
| <i>lanceolata</i> Womersley | ---; 59 | Womersley | 1952 |
| <i>leverii</i> Womersley | March; 190 | Womersley | 1952 |

TABLE 1 - MITES (continued)

| SPECIES | SPECIFIC NOTES; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|--|------------------------|------|
| <i>TROMBICULA</i> | | | |
| <i>longiseta</i> Womersley | ---; 59, 143 | Womersley | 1952 |
| <i>maoacus</i> Womersley | ---; 143 | Womersley | 1952 |
| <i>mediocris</i> Berlese | ---; 77 | Miyashima & Okumura | 1919 |
| | ---; 146 | Hatori | 1919 |
| <i>minor</i> Berlese | ---; 146 | Womersley & Heaslip | 1943 |
| <i>minor</i> var. <i>daliensis</i> Walch | ---; 149, 190 | Womersley & Heaslip | 1943 |
| <i>mitamuri</i> Sasa, Teramura & Kano | ---; 158 | Wharton & Fuller | 1952 |
| <i>miyajimai</i> Fukuzumi & Obata | ---; 158 | Wharton & Fuller | 1952 |
| <i>miyasakii</i> Sasa, Sawada, Kano, Hayashi & Kumada | ---; 158 | Wharton & Fuller | 1952 |
| <i>munda</i> Gater | ---; 70 | Womersley | 1952 |
| | All year; 190 | Gater | 1932 |
| <i>muridia</i> Womersley | ---; 190 | Womersley | 1952 |
| <i>nagayoi</i> Sasa, Hayashi, Sato, Miura & Asahina | ---; 158 | Wharton & Fuller | 1952 |
| <i>orientalis</i> Schluger | ---; 294 | Wharton & Fuller | 1952 |
| <i>oudemansi</i> Walch | March, May-Nov.; 143 | Mahta | 1937 |
| <i>pallida</i> Nagayo, Mitamura & Tamiya | ---; 158 | Womersley | 1952 |
| | ---; 158* | Wharton & Fuller | 1952 |

TABLE 1 - MITES (continued)

| SPECIES | SPECIFIC NOTES; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|--|---------------------|------|
| <i>TROMBICULA</i> | | | |
| <i>palpalis</i> Nagayo, Mitamura & Vamiya | ---; 158 | Womersley | 1952 |
| <i>parapalpalis</i> Womersley | ---; 143 | Roy & Brown | 1954 |
| | ---; 235 | Womersley | 1952 |
| <i>parmifera</i> Womersley | ---; 190 | Womersley | 1952 |
| <i>pavlovskyi</i> Schluger | ---; 294 | Wharton & Fuller | 1952 |
| <i>pelta</i> Womersley | Oct.; 143 | Womersley | 1952 |
| <i>piercei</i> Ewing | ---; 242 | Womersley | 1952 |
| <i>pomeranseri</i> Schluger | ---; 294 | Wharton & Fuller | 1952 |
| <i>pseudoakamushi</i> Hatori | ---; 77 | Hatori | 1919 |
| <i>pseudo-schliffneri</i> Walch | ---; 149* | Farner | 1943 |
| <i>puta</i> Womersley | Oct.; 235 | Womersley | 1952 |
| <i>radfordi</i> Schluger | ---; 294 | Wharton & Fuller | 1952 |
| <i>rajoriensis</i> Womersley | May; 235 | Womersley | 1952 |
| <i>rara</i> Walch | ---; 146 (On man) | Wharton & Fuller | 1952 |
| | ---; 149*, 190. April; 242 | Womersley | 1952 |
| | ---; 190* | Audy | 1950 |
| <i>rossica</i> (Oudemans) | ---; 256 | Fuller | 1952 |
| | ---; 294 | Wharton & Fuller | 1952 |
| <i>schmitzi</i> (Oudemans) | ---; 143 | Wharton & Fuller | 1952 |

TABLE 1 - MITES (continued)

| SPECIES | SPECIFIC NOTES; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|--|---|--------------|
| <i>TROMBICULA</i> | | | |
| <i>scitnooides</i> Womersley | ---; 242 | Womersley | 1952 |
| <i>scutellaris</i> Nagayo, Miyagawa, Tamiya & Tenjin | Sept.; 158 ---; 158° | Womersley Wharton & Fuller | 1952 1952 |
| <i>siamensis</i> Nadchatram & Mitchell | ---; 277 | Nadchatram & Mitchell | 1965 |
| <i>spicea</i> Gater | ---; 70 Aug.; 190 | Womersley Gater | 1952 1932 |
| <i>squamifera</i> Womersley | ---; 235 | Womersley | 1952 |
| <i>squamosa</i> (Radford) | ---; 143 | Womersley | 1952 |
| <i>subakamushi</i> Schluger | ---; 294 | Wharton & Fuller | 1952 |
| <i>sylvestris</i> Audy & Traub | Dec.; 190 | Womersley | 1952 |
| <i>tamiyai</i> Philip & Fuller | Sept.-Nov.; 158° ---; 158 | Philip & Fuller Wharton & Fuller | 1950 1952 |
| <i>taphozous</i> Womersley | ---; 190 | Womersley | 1952 |
| <i>tenjin</i> Sasa, Kumada, Hayashi & Miura | ---; 158 | Wharton & Fuller | 1952 |
| <i>teramurai</i> Sasa, Kumada & Teramura | ---; 158 | Wharton & Fuller | 1952 |
| <i>tithwalensis</i> Womersley | ---; 235 | Womersley | 1952 |
| <i>traubi</i> Womersley | ---; 143 | Womersley | 1952 |
| <i>vietzi</i> Womersley | ---; 143 | Womersley | 1952 |
| <i>villosa</i> Womersley | ---; 143 | Womersley | 1952 |

TABLE 1 - MITES (conclusion)

| SPECIES | SPECIFIC NOTES; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|---|------------------------|------|
| <i>TROMBICULA</i> <i>walohi</i> Womersley & Heaslip | ---; 190 | Womersley & Heaslip | 1943 |
| <i>webri</i> Browning & | Experimental transmission of scrub typhus Sept.-Nov.; 143 | Browning & Kalra | 1948 |
| <i>wichmanni</i> (Oudemans) | ---; 59, 77, 145, 147, 149, 242 (On man, vector of dermatitis) | Wharton & Fuller | 1952 |
| | ---; 145°, 146, 242° | Womersley | 1952 |
| | ---; 190° | Lewthwaite | 1927 |
| <i>zschvatkini</i> Schluger | ---; 294 | Wharton & Fuller | 1952 |
| <i>TYROGLYPHUS</i> <i>farinae</i> Linnaeus | In human alimentary and urinary tracts; 70* | Carter et al. | 1944 |
| <i>longior</i> | In sputum of man; 70° | Carter et al. | 1944 |
| <i>longior</i> var. <i>castelani</i> Hirst | ---; 70* | Castellani & Hirst | 1912 |
| <i>TYROPHAGUS</i> <i>dimidiatus</i> (Schränk) | In human urine; 158 | Sasa | 1951 |

TABLE 2 - SUMMARY OF DISEASES OR DISEASE ORGANISMS TRANSMITTED BY MITES

| SPECIES | DISEASE OR DISEASE ORGANISM | | | | | COUNTRY |
|-------------------------------------|------------------------------|----------|-----------|---------------------|------------------------|---|
| | VIRUS RICKETTSIA | PROTOZOA | HELMINTHS | OTHER | | |
| <i>LEPTUS</i> | | | | | | |
| <i>akamushi</i> (Brumpt) | Fever | | | | | 158 |
| <i>autumnalis</i> Gudden | | | | Dermatitis | | 76 |
| <i>MICROTHROMBIDIUM</i> | | | | Dermatitis | | 147 |
| <i>wichmanni</i> (Oudemans) | | | | | | |
| <i>NOTOEDRES</i> | | | | | | |
| <i>cati</i> Hering | | | | Dermatitis | | 321 |
| <i>PEDICULOIDES</i> | | | | | | |
| <i>ventriosus</i> (Newport) | | | | Dermatitis | | 70 |
| | | | | Cutaneous eruptions | | 76 |
| | | | | Dermatitis & Asthma | | 256 |
| | | | | Dermatitis | | 317 |
| <i>RHIZOGLYPHUS</i> | | | | | | |
| <i>echinopus</i> Fumouze & Robin | | | | Dermatitis | | 256 |
| <i>parasiticus</i> Dalgetty | | | | Dermatitis | | 70 |
| <i>SCARCOPTES</i> | | | | | | |
| <i>scabiei</i> (De Geer) | | | | Scabies | 76 168 | 194 |
| <i>SCHÖNGASTIA</i> | | | | | | |
| <i>schöffneri</i> (Walch) | Tsutsugamushi typhus | | | | 149 | 190 |
| <i>TROMBICULA</i> | | | | | | |
| <i>acutellaris</i> Walch | Tsutsugamushi | | | | | 143 |
| <i>akamushi</i> (Brumpt) | Japanese River fever | | | | | 158 (Philip et al. 1946) |
| | <i>Rickettsia orientalis</i> | | | | 70 77 143 144 | 149 (Williams 1944) 158 (Mehta 1958) 168 190 |

TABLE 2 - MITES (conclusion)

| SPECIES | DISEASE OR DISEASE ORGANISM | | | | | COUNTRY |
|---|--|----------|-----------|--------------------------------|------------------------|--|
| | VIRUS & RICKETTSIA | PROTOZOA | HELMINTHS | OTHER | | |
| <i>TROMBICULA</i> <i>akamushi</i> (Brumpt) (cont.) | Scrub typhus | | | | 146 158 | 242 (Philip 1948) |
| | Tsutsugamushi | | | | | 59 76 77 (Philip 1948) 143 (Mehta 1937) 149 158 (Philip 1948) 190 (Philip 1948) 242 |
| | Typhus | | | | | 77 (Geigy & Herbig 1955) 158 (Philip 1948) |
| <i>TROMBICULA</i> <i>deliensis</i> Walch | <i>Rickettsia</i> <i>orientalis</i> | | | | 70 77 143 144 | 149 158 168 190 |
| | Scrub typhus | | | | | 242 |
| | Tsutsugamushi | | | | | 59 70 (Philip 1948) 76 143 145 146 149 (Philip 1948) 190 (Philip 1948) 191 |
| <i>TYROGLYPHUS</i> <i>farinae</i> Linnaeus | | | | Infection of urinary tracts | | 70 |
| <i>longior</i> var. <i>castellani</i> Hirst | | | | Dermatitis | | 70 |

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M. MISCELLANEOUS ARTHROPODS

The entries listed as miscellaneous arthropods are largely scorpions and spiders.
There are in all only 24 species or subspecies listed.

TABLE 1 - MISCELLANEOUS ARTHROPODS

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|--|---|---|-------------------------------|
| <i>ASTEGOTERYX</i> <i>styracicola</i> Takahashi | ---; pierces skin upon contact causing eruptions; 77 | Takahashi | 1930 |
| <i>BLATTA</i> <i>germanica</i> Linnaeus | ---; experimentally infected with typhoid fever and paratyphus; 294 | Rosenholtz & Iudina | 1940 |
| <i>BUTHUS</i> <i>europaeus</i> | ---; may cause death in children; 143 | Efrati | 1949 |
| <i>quinquestriatus</i> Hemprich & Ehrenberg | ---; sting may cause death; 154* | Efrati | 1949 |
| <i>CACCOBIUS</i> <i>mutans</i> Sharp | ---; rare, in intestines of children; 143* | Iyengar | 19281 |
| <i>LATRODECTUS</i> <i>agonyangyang</i> Plantilla & Mabalay | ---; in farms, across holes of old stones and dried leaves or stumps of wood on the ground surface, bite poisonous to man; 242* | Plantilla & Mabalay | 1935 |
| <i>hasselti</i> Thorell | ---; sting poisonous to man; 242* | De Asia | 1934 |
| <i>lugubris</i> Motschulsky | ---; sting may cause acute abdominal pain; 342* | Hargreaves & Mackenzie | 1942 |
| <i>tredecimguttatus</i> Russi | ---; ---; 256* | Martsinovskii | 1934 |
| <i>LINGUATULA</i> <i>serrata</i> Frölich | ---; in respiratory tract of man; 143 | Roy & Ganguly | 1940 |
| <i>ONTHOPHAGUS</i> <i>bifasciatus</i> Fabricius | ---; common, human intestines; 59*, 143* ---; in lower intestines of children; 70* | Iyengar Senior-White | 19281 1920 |
| <i>ONTHOPHAGUS</i> <i>unifasciatus</i> Schall | ---; in children's intestines; 70*, 143* | Iyengar | 19281 |
| <i>PEDICULUS</i> <i>capitis</i> (De Geer) | ---; vector of <i>Rickettsia prowazekii</i> ; 25*, 76*, 150*, 158*, 256* ---; ---; 77* ---; experimental transmission of recurrent fever; 256 ---; vector of typhus and relapsing fever; 317** | Geigy & Herbig Neumann Shapsheva Anonymous | 1955 19131 1924 1944 |

TABLE 1 - MISCELLANEOUS ARTHROPODS (continued)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|---|-------------------------|------|
| <i>PEDICULUS</i> <i>corporis</i> De Geer | Eggs in clothing; naturally infected with <i>Spirochaeta recurrentis</i> , in clothing; 76 | Chung | 1936 |
| | Eggs fastened to threads and seams of garments; bloodsucker; 242° | Banks | 1919 |
| | ---; vector of typhus and relapsing fever; 317** | Anonymous | 1944 |
| <i>humanus</i> Linnaeus | ---; experimental transmission of relapsing fever; 76 | Chung & Wei | 1938 |
| | ---; possible carrier of typhus; 76 | Liu & Zia | 1941 |
| | ---; found in houses; 143 | Awati | 1922 |
| | ---; experimental transmission of typhus; 143° | Covell & Mehta | 1936 |
| | ---; ---; 144* | Lepine | 1936 |
| | ---; in clothing, natural infected and experimental transmission of plague; 146 | Schwellengrebel & Otten | 1914 |
| | ---; experimental transmission of recurrent fever; 256 | Shapshava | 1924 |
| | ---; vector of typhus and relapsing fever; 317** | Anonymous | 1944 |
| <i>humanus</i> <i>capitis</i> De Geer | ---; ---; 76° | Patton | 1926 |
| | ---; capable of transmitting epidemic typhus and relapsing fever; 168 | Barnett & Toshioka | 1951 |
| <i>humanus</i> <i>corporis</i> De Geer | ---; ---; 76* | Hsiao | 1945 |
| | ---; transmits murine typhus from man to man; 76* | Liu | 1944 |
| | ---; causes irritation of the scalp often leading to septic infection; 159. ---; ---; 342** | Anonymous | 1944 |
| | ---; most prevalent during cooler months, vector of epidemic typhus and louseborne relapsing fever; 168** | Barnett & Toshioka | 1951 |
| | ---; ---; 164** | Hsiao | 1946 |
| <i>humanus</i> <i>var. vestimentis</i> Linnaeus | ---; ---; 76*** | Patton | 1926 |

TABLE 1 - MISCELLANEOUS ARTHROPODS (concluded)

| SPECIES | BREEDING HABITATS; ADULT ACTIVITY; DISTRIBUTION (GENERAL STATEMENTS) | AUTHOR | DATE |
|---|--|------------------------|------|
| <i>PEDICULUS</i> <i>vestimenti</i> Nitzsch. | ---; vector of <i>Rickettsia prowazeki</i> ; 25*, 76*, 150*, 158*, 256*, 270* | Geigy & Herbig | 1955 |
| <i>PERIPLANETA</i> <i>orientalis</i> Linnaeus | ---; experimentally infected with typhoid fever and paratyphus; 294 | Rosenholtz & Iudina | 1940 |
| <i>PHTHIRUS</i> <i>pubis</i> (Linnaeus) | ---; experimentally infected with typhus; 76 | Chung | 1945 |
| | ---; ---; 76° | Patton | 1926 |
| | ---; bloodsucker; 242° | Banks | 1919 |
| | ---; vector of typhus and relapsing fever; 317** | Anonymous | 1944 |
| <i>PRIONURUS</i> <i>crassicauda</i> | ---; ---; 154° | Efrati | 1949 |
| <i>RUTHUS</i> <i>martinsi</i> Karsch | ---; enters houses during summer, painful sting causing fever and death; 168* | Hsiao | 1948 |
| <i>SCOLOPENDRA</i> <i>subspinipes</i> Leach | ---; ---; 242° | Remington | 1950 |

TABLE 2 - SUMMARY OF DISEASES OR DISEASE ORGANISMS TRANSMITTED BY
MISCELLANEOUS ARTHROPODS

| SPECIES | DISEASE OR DISEASE ORGANISM | | | | | COUNTRY |
|--|--|----------|-----------|----------------------------------|--------------------------|---------|
| | VIRUS & | PROTOZOA | HELMINTHS | OTHER | | |
| | RICKETTSIA | | | | | |
| <i>CACCOBIUS</i> <i>mutans</i> Sharp | | | | intestinal myiasis | 143 | |
| <i>LATRODECTUS</i> <i>agoyangyang</i> Plantilla & Mabalay | | | | Arachnidism | 242 | |
| <i>ONTHOPHAGUS</i> <i>bifasciatus</i> Fabricius | | | | intestinal myiasis | 59, 70, 143 | |
| <i>unifasciatus</i> Schall | | | | intestinal myiasis | 70, 143 | |
| <i>PEDICULUS</i> <i>capitis</i> (De Geer) | <i>Rickettsia</i> <i>provasecti</i> | | | | 25, 76, 150, 158, 256 | |
| | typhus | | | relapsing fever | 317 | |
| <i>corporis</i> De Geer | typhus | | | relapsing fever | 317 | |
| <i>humanus</i> Linnaeus | epidemic typhus | | | | 144 | |
| | typhus | | | relapsing fever | 317 | |
| <i>humanus</i> <i>corporis</i> De Geer | | | | relapsing fever | 76 | |
| | Murine typhus | | | | 76 (Liu, 1944) | |
| | epidemic typhus | | | louseborne relapsing fever | 168 | |
| | typhus fever | | | relapsing fever | 194 | |
| | typhus | | | relapsing fever | 342 | |
| <i>humanus</i> var. <i>vestimenti</i> Linnaeus | typhus trench fever | | | relapsing fever | 76 | |

TABLE 2 - MISCELLANEOUS ARTHROPODS (conclusion)

| SPECIES | DISEASE OR DISEASE ORGANISM | | | | | COUNTRY |
|---|--|----------|-----------|--------------------|--|-------------------------------|
| | VIRUS & | | | | | |
| | RICKETTSIA | PROTOZOA | HELMINTHS | OTHER | | |
| <i>PEDICULUS</i> <i>vestimenti</i> Nitsch | <i>Rickettsia</i> <i>provanseki</i> | | | | | 25, 76, 150, 158, 256, 270 |
| <i>PHTHIRUS</i> <i>pubis</i> Linnaeus | typhus | | | relapsing fever | | 317 |
| <i>RUTHUS</i> <i>martinsi</i> Karsch | | | | fever | | 168 |

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| 13. ABSTRACT | | |
| <p>The occurrence of insects and other arthropods of medical importance in Asia and the European USSR is summarized on the basis of a compilation of all available references in the scientific literature. The report includes, for each major group of arthropods, a listing of species and subspecies with biological and distributional data, tabulations of diseases or disease organisms transmitted, and complete literature citations.</p> <p>The groups of arthropods included, with the number of species or subspecies in parentheses, are:</p> <p>Part I: Mosquitoes (1236)</p> <p>Part II: Arthropods other than mosquitoes: Black flies (228), Sand flies (166), Midges (272), Horse flies (1132), Biting flies (9), Non-biting flies (36), Fleas (717), Bugs (11), Urticating and vesicating arthropods (23), Ticks (401), Mites (134), and Miscellaneous arthropods (24).</p> | | |

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