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TRANSLATION NO. 1334

DATE: 43

DATE: July 68

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GENERAL GOVERNMENT OF INDOCHINA

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INDOCHINA RICE OFFICE

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VARIETIES of RICE from TONKIN  
ACTUALLY SELECTED AND PATRONIZED  
by the RICE OFFICE  
in the EIGHT PROVINCES of the DELTA

---

Hanoi, Imp. G. Taupin and Cie-  
25923

Varieties of rice from Tonkin selected and patronized by the Rice Office in the eight provinces

The present opuscle is a sort of catalogue of selected varieties actually patronized by the Rice Office in Tonkin. These varieties come from a severe selection undertaken in a great number of local populations frequently cultivated. In the eight provinces of Vinh-yen, Phuc-yen, Son-tay, Bac-ninh, Bac-giang, Hai-duong, Hung-yen and Thai-binh 398 populations were gathered up (1). 621 types were separated in the interior of these populations by purification. Only 65 types are actually patronized.

The augmentation of yield being the primordial goal that the selection must aim at in Tonkin. In the choice of patronized types one kept track above all of cultural qualities proven first of all on the test fields of provincial or regional rice Stations and then controlled on the fields of collaborators from the Rice Office. . . (text unclear). The commercial quality was not neglected and was the object of studies effected at Hanoi in view of the local market and, in a certain measure, the export market.

The methods employed for the amelioration of vegetal material comprises, above and beyond the selection of local populations of the province, the system of introduction of foreign varieties to the province which had quite similar aptitudes, which permitted to obtain results truly deserving of attention. Finally, quite considerable number of lines and of mixtures of lines was obtained by pedigree selection of interesting varieties; their study is not terminated but one may hope from it a notable amelioration of the material actually patronized.

(1) Without counting the glutinous rices and the mountain rices which are the object of particular selections.

Of 65 varieties described in this catalogue, 3 are constituted by lines or mixtures of lines, 62 are of purified types: 55 are patronized in their own province of origin

7 do not originate from the provinces where they are patronized (two of these are patronized at the same time in two different provinces).

The present catalogue is far from being definitive.

In the eight provinces previously cited, the action of the Rice Office extends in surface and in depth. Tests follow one after the other. Where the varieties patronized do not satisfy, one researches better adapted varieties. Where they have been satisfactory, one searches to replace them by types or lines still more interesting. The actual list will thus presently undergo additions and replacements.

The Rice Office is already beginning to work in Ha-dong and Nam-dinh. But the few varieties there that are actually patronized were not carried in this catalogue because they only concern surfaces of relatively little importance. The study of diverse rice zones of these two provinces is actively pursued.

Also, do not expect in this catalogue selected varieties of special interest whose pure seeds are sold, so to speak, on demand by the rice stations and whose limited culture area does not justify an active propaganda:

Rice of the X month: precocious varieties: Som gi 6lab in Bac-giang, semi-precocious Som sung 72 at Bac-giang, Gie min 696 at Bac-ninh, Gie canh 8 and 604 at Phuc-yen, Gie hoa 56 at Son-tay; seasonal varieties: Tam deo 151 and Ven 250 b in diverse provinces, Tam coi 540ab in Bac-giang; late varieties Gie bun X in Bac-ninh, Hin XXI in Thai-binh and Gie nuoc Me-tri 509 in Ha-dong; perfumed varieties: Tam thom 84a in Bac-ninh, Tam thom 15 in Phuc-yen, Tam xoan XX in Thai-binh; varieties with very long grains: Saibuibao K 38, Sarm deum K 36 in Son-tay and Bac-giang; rustic variety but of low commercial value: Hom 88 in Hung-yen.

Rice of the V month: somewhat precocious varieties: Chiem som 149 and Chiem ech 357 in Bac-giang; variety resistant to somewhat salty water Chiem bau 240 from Kien-an; long grain variety: Chiem di 356 at Bac-ninh.

Finally, to call attention to a variety selected by the agricultural services of Tonkin over a duration of several years: Lua Canh-Nong who has showed itself to be interesting in certain districts of the provinces of Vinh-yen, Phuc-yen, Bac-ninh, Ha-dong and Son-tay. It will be carried in the next catalogue when its

election zones will be delimited.

The more complete catalogue to follow will comprise maps of provinces where the possible extension zones of each of the patronized varieties will figure. The delimitation of these already known zones in their great lines need to be precised by semi-industrial tests.

The use of the patronized varieties brings an augmentation of the income of the rice field, from one side the fact of the increase of returns that can attain in certain cases up to 20% and which maintains itself normally in the 5 to 10%, and from the other side, the fact of the amelioration of the quality which gives to the product an added value of 5 to 10% according to the regions. The rice grower obtains thus, in utilizing the select varieties, without difficulty and without supplementary expenses, an assured and substantial benefit.

The cultural and botanical characteristics of patronized varieties were carried in the tables established by province. They are the results of observations made in the Stations in the test fields and with the collaborators.

Photographs of rice and paddy in natural grandeur allows one to appreciate the form of the grain and its transparency as much as possible.

Botanical characteristics must permit the classification of varieties and their identity.

To class the varieties in simple groups, one utilizes absolute characteristics generally of the type: presence, absence. These characteristics of classification must be ranged according to their taxonomic value to establish a rational dichotomic key. However, they do not suffice to identify the varieties. It is necessary to adjoin to it other said characteristics of "description". Certain of these are absolute but are found quite infrequently. Most of them are relative and can be utilized according to standards or principles established in advance.

The characteristics of classification utilized by the genetic laboratory of the Rice Office in Saigon are the following:

1. Starchy or gummy grain;
2. Mutic, aristate, or barbate grain;
3. Caryopsis with red or white pellicle;
4. Grain with colored or non colored glumellas;
5. Grain with black point, or without black point;
6. Grain with round form and size, 1/2 round, 1/2 long, long or very long;

7. Plant with colored or non colored sheaths.
8. Plant with colored or non colored auricles;
9. Plant with colored or non colored leaves;
10. Plant with colored or non colored internodes;
11. Plant with colored or non colored nodes;
12. Plant with colored or non colored leaf sheath articulation.

Certain authors incorporate in this list the characteristics of length of husks and form of the glume. In Tonkin all of the varieties have normal husks, except a few populations little cultivated with long sheaths and lightly colored glumellas (type Gie canh 8) or colored (type Gie canh 604). The form of the glume in the varieties of reduced form and size of grain as is most of those of the Tonkinese delta is difficult to determine with exactitude. The great majority have a straight glume. A few imported varieties (Saibuibao K 38, Sarm deum K 36) and certain varieties of the High Region have a glume clearly bent back.

One can thus stick to the utilized characteristics in Cochinchina. In addition one must remark that for the nearly totality of varieties from Tonkin and in all cases for all of the patronized varieties, the coloration of the apex is tied to that of the vegetative organs (sheaths, auricles, leaves, internodes, nodes, leaf sheath articulation). In order to simplify the table, vegetative characteristics were grouped in a single column. Besides, they are less important than the seeding characteristics, the varieties owing to be recognized according to their paddy.

The observation of the characteristics of conserved classification does not present any difficulties.

The starchy characteristic is recognizable in the relative transparency of the grain, in its behavior in boiling. The gummy rices have opaque grains (still transparent when the drying was not pushed) and give a gummy mass after boiling. The reaction to the iodine that tints the starchy grains blue and the gummy grains reddish brown is characteristic for all doubtful cases. All of the patronized varieties actually belong to the starchy group. The selection of gummy rices had its beginnings later on.

The barbate characteristic must be envisaged from an absolute point of view. If a variety presents a single grain furnished with a more or less short barb, it is said to be aristate. All of the patronized varieties are aristates. Their grains are normally mutic but a few rare grains at the summit of the panicle have a short barb. For the few varieties that have a higher percentage of aristated grains, mention of it is carried in the "characteristics of description".



The caryopsis (rice grain) of all of the patronized varieties is without color (white pellicle). The selections began uniquely with the varieties of this type (1). Certain varieties normally present a pinkish brown pellicle more or less thick, assimilated for the white pellicle classification. This characteristic is utilized for the identification even though it should be submitted quite strongly to the conditions of harvest and drying.

The coloration of the glumellas must be envisaged in the presence absence point of view, the relative coloration being utilized for the description. The paddy of one variety is said to be non colored when there is no trace of pigmentation on the glumellas. There is sometimes doubt, the pigmentation not being visible except to the magnifying glass.

The coloration of the apex (extremity of the grain) is easy to observe. For all of the patronized varieties, when the apex is pigmented, there is the presence of anthocyanin in the vegetative organs. The normal form is the following: black violet apex, sheath lightly colored violet longitudinally at the base, coloration that is perceived better on the internal epidermis, auricle colored in light violet (transient). Coloration of the leaves is normally reduced to the simple border of the limb generally only towards the top (deep violet). For the internode, the coloration is above all visible on the part disengaged from the sheath of the leaf, under the form of longitudinal bands more or less wide and more or less deep. The coloration of the node is generally diffuse, pigments of black violet points, sometimes very slightly accentuated (fine dust visible only under the magnifying glass). Finally, the leaf sheath articulation forming two triangles opposed by the summit presents a generally uniform coloration.

The dimensions of the grains from the paddy(2) of one variety are subject to variation in a same panicle and likewise according to the conditions of the surroundings. But the length and the width vary in the same sense, their relation much more fixed can be considered as an absolute characteristic. The mensurations are made on the micrometer gauge on 100 grains or better, on 500 grains. If one puts on a graph in abscissa the length of the grains and ordered the width of it, the average dimensions are represented by a point. In the ensemble the varieties of Cochin China have forms and sizes more

(1) The populations of red rices cover quite a large area. They were not included in the selections program: the amelioration of the quality of purification is not actually interesting for these varieties of low commercial value. But the study of certain populations resistant to saltiness or to excess water was undertaken.

(2) GUTSCHIN utilizes in his classification the dimensions of caryopsis, easier to measure, the mensurations of paddy grains being subject to caution due to the fact of the presence of the glume.

more dissimilar than those of Tonkin, the area covered by these representative points on the graph is nearly double that of Tonkin. If one does not take into account the varieties of round form and size that are very little cultivated (6 to 8% only of the surfaces in culture) and depreciated on the local and foreign market (grains of very small form and size, frequent white body), the varieties of Tonkin are classed in the forms and sizes 1/2 round (10% of the cultures), 1/2 long and long (80% of the cultures). Besides this, it is necessary that the limits utilized in Cochin China to determine this form and sizes (length on width relation: 2.25, 2.75, 3.25, and 3.75) present the great inconvenience to fall in the middle of the groups of Tonkinese varieties very near each other and giving commercial kinds of locally well known rices.

In order not to be in contradiction with the current practice, the following limits were adopted in Tonkin:

$\frac{L}{I} < 2.40$  round grain,  
2.40 — 2.90 grain 1/2 round,  
2.90 -- 3.40 grain 1/2 long,  
➤ 3.40 --- long grain.

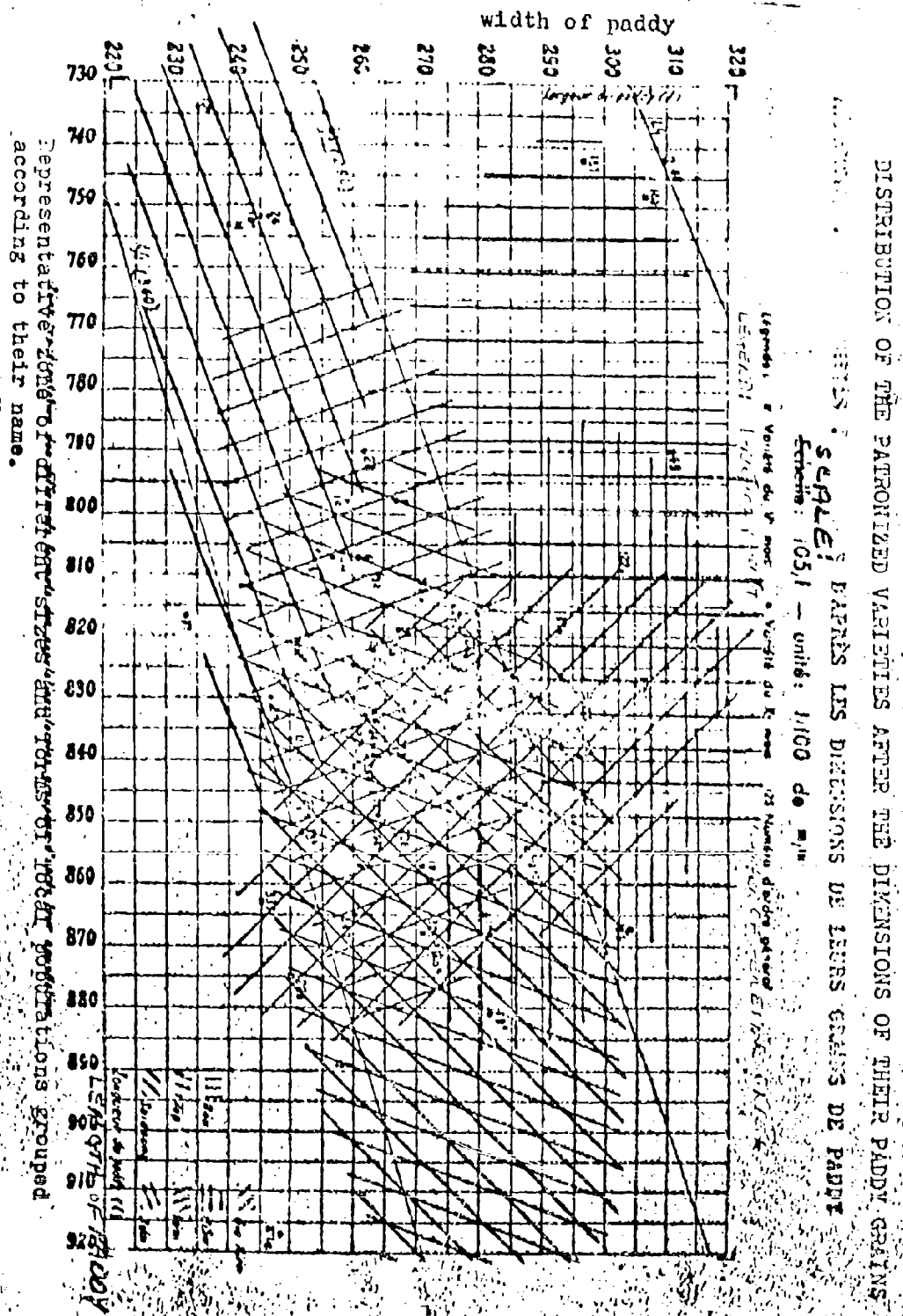
These different characteristics (1) permits the establishment of a dichotomous key. That which is utilized by the Genetic Laboratory of Saigon comprises 15,360 cases, but certain cases are very encumbered and certain combinations are unknown. In Cochin China, 1,815 gathered varieties occupy 88 cases, 2 cases contain 41% and 8 other cases comprise 44% of the varieties. In Tonkin, all of the patronized varieties are distributed in 6 cases.

In the tables of botanical characteristics, characteristics of description had been conveyed (1) relative to the paddy: form of the glume, length and coloration of the husks, average dimensions, pigmentations of the glumellas, ornamentation of the glumellas, relatives to the rice grains: form, thickness of tegmen, grooves, transparency, white body, and relatives to the panicle. The study of these characteristics leads to the following remarks.

The form of the glume is an important characteristic of cultural classification in Tonkin. The varieties of Spring (V month) have a very reduced glume, those of the rainy season (X month) have a more pronounced glume. The curve of the glume is a difficult characteristic to observe when it is very reduced.

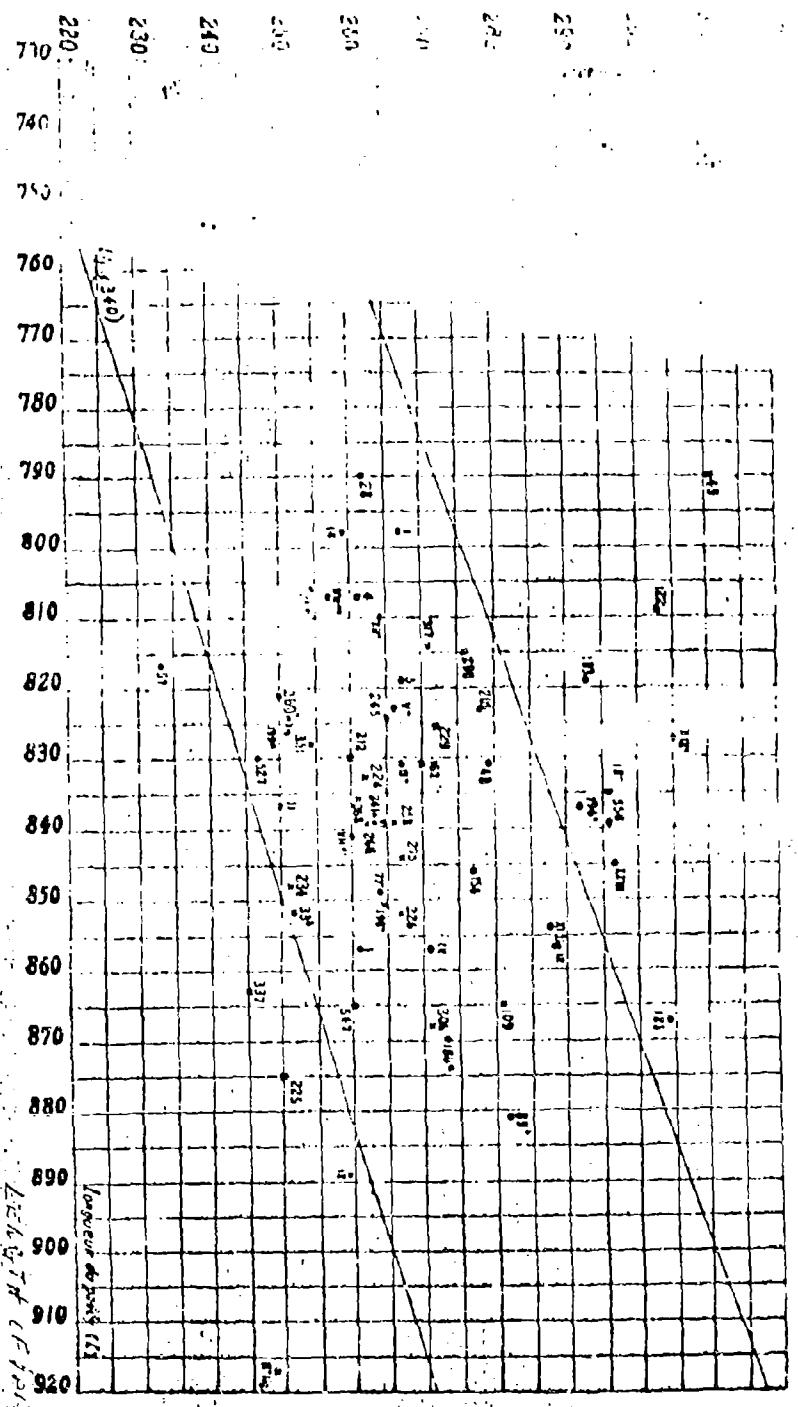
The characteristics of the husk are easy to observe. The long husks are special to the varieties called Gie canh; the colored husks exist in certain populations named Hom.

(1) The study of these different characteristics is exposed in a detailed manner in the installment Archives of the Rice Office. ---Installment 3 (1937).



GRAPHIC NOT REPRODUCIBLE

MAP OF INDIA



DISTRIBUTION OF PATRONIZED VARIETIES ACCORDING TO THE DIMENSIONS OF THEIR PADDY GRAINS

Scale: 105/1 -- variety of the month 1/100 of EM.

Legend: Variety of the V month      Variety of X month 125 n. of General order

LEADER OF Paddy

GRAPHIC NOT REPRODUCIBLE

The dimensions of the grains vary greatly. But if the averages are established for normal culture conditions--in the provinces where these varieties are cultivated and patronized--they have a non-negligible relative value.

The pigmentations of the glumellas are determined in comparison with those of certain varieties taken as standards in separating the coloration of the base and the coloration of pigmentations superimposed on this base.

light yellow base: 9-a Gie nuoc. 231-b Muon trang, 26 Bat ngoat, 246 Som muoi.

dirty yellow base: 582 Lua thong, 503 Hin do, 143 Gi da

yellow base: 218-a Hom, 230-c Hom mua, 88 Hom.

golden yellow base: 540-b Tam coi, 880 Rice from Chau Yen-Son

bright yellow base: 218-b Hom, 627-d Hau leng.

greenish grey base: 874 Paddy nep violet.

ocher base coloration	{ 116 Ru thom, 35 Hin soc,
light yellow ocher:	{ 77-b Tam xoan.
-- light brown on base	{ 30 Tam to, 138 Tam ruoi,
yellow ocher:	{ 28 Tam nho or Tam lun.
-- brown on yellow ocher	{ 234-a Tam den or Giau den,
base	{ 224 Giau vang.
-- dark brown on base of	{ 127-b Tam den.
yellow ocher:	
-- black-brown on base of	{ 923 Khau bong lai,
yellow ocher:	{ 730 Nep lao van.
-- brown-violet coloration	{ 625 Nep cau oong ni.
on base of light yellow:	
-- dark brown on base of	{ 880 Rice of Chau Yen-Son.
golden yellow:	
-- red-brown on base of	{ 898 gummy Rice No. 7 Hagiang.
golden yellow:	
-- red-brown on base of	{ 615-b Mo soi.
light yellow:	

- lightly burnt bread on a light yellow ocher base: { 214 Gie,  
219-b Tam thom,  
220-b Tam xcan.
- burnt bread on a yellow ocher base: { 219-a Tam thom,  
247-a Tam xoan,  
150 Tam xoan.
- dark burnt bread on a yellow ocher base: { 210 Tam xoan,  
209-b Tam thom.
- black violet on a pale yellow base: { 917 Nep khoai.
- letchi on a light yellow base: { 616-a So leng vu.
- black violet: { 626-b Nep khau ca.

The glumellas are, moreover, less hairy, the sides are more or less projecting. The patronized varieties do not present a special characteristic on these two points. The rachilla can be more or less curved.

The rice grain can be curved: characteristic of certain rices of India. The one of the Tonkinese varieties is straight. The tegmians of caryopsis can be of a pinkish brown color, this depending often on the drying conditions and sometimes on the variety (Tam lun 28, Lua chim 241, etc. . .). Grooves more or less profound can exist on the rice grain (necessitating a more extended machine finishing). The patronized varieties are normal to this last point of view.

The transparence of the grain depends in part on the variety, but it is strongly submitted to the conditions of the surroundings; the grain can be transparent, translucent or opaque. The white body is an opacity that only affects one part of the grain; it can be external or internal, linear or extended, superficial or profound. The grains of a same variety are moreover more or less transparent. In general, types 1/2 round and round have a white body, but they are sometimes stripped of it. Types 1/2 long and long are generally transparent, but certain years or in certain rice fields they can be translucent or with internal white body. The varieties of the V month ordinarily lack transparency, but there are exceptions.

The panicle can be tight or loose (separation of the clusters of the panicle as a result of a swelling in the axilla of the secondary rachis). The rachis can be straight or sinewy. The nodes of the panicle can be hairy or not. The inferior clusters can have spikelats beginning from the base (some foreign rices) or only at the extremity. The grains can be distributed regularly on the clusters or grouped (some rices from the high region). Finally, the panicle can be, in normal conditions, short, average, or long

(varieties: gummy rices, rice of the high regions, Siamese rice with long panicles).

Despite their great number, these characteristics of description are often enough insufficient to identify with sufficient certitude certain varieties and, above all, certain lines which, however, present particular biological aptitudes. Also the study of secondary supplementary characteristics called "small characteristics" was undertaken in the Genetic Laboratory of Saigon just as at Hanoi. The works effected on the other cereals showed that almost all of the cultural characteristics have their correspondance in the sowing. Thus it must be possible to find equally for the rice interesting distinctive small characteristics.

It is necessary to note that varieties very near one another were conserved; they correspond to zones of different elections. The semi-industrial tests and the controls of returns will precise if the appreciations given by the cultivators are justified and if reductions can not be operated.

The present catalogue is not a "general catalogue of rice varieties of Tonkin". Certain personalities of the agricultural milieu expressed the desire to see the Rice Office establish this general catalogue and give an official name to all of the varieties. The establishment of such a document is not a simple thing. The number of varieties is considerable. The prospections effected in depth in the delta and in the middle and high Tonkinese region make new populations appear. On the other hand, selection works effected in the different populations make new types or biological lines constantly appear. If one wanted to content himself with a gross commercial classification of cultivated principle varieties, he would present himself with no difficulty. But if one wants to establish a serious catalogue of cultural varieties it is necessary to be prudent. The more the genetic works follow each other, the more they show that it is necessary to avoid gross assimilations and hasty identifications, particularly in relying upon local denominations.

In other respects, in the research of populations there has appeared quite a great number of little cultivated varieties of cultural and low commercial interest, and on the other hand the purifications permitted to disengage secondary types that revealed themselves without a future. Finally, the comparison of neighboring populations on the test fields brought attention to their unequal value. The multiplication and the diffusion of the patronized varieties contribute to eliminate the populations without interest. There results from it, thus, at an expiration more or less brought nearer, a reduction of the number of varieties.

#### Denominations--Local Classification

One has conserved in the patronized varieties their local denominations. One must not accord more value to these names than they

have. One finds, in effect, just as in Cochin China, varieties of different aptitudes known under a same vocable. On the other hand, varieties appearing identical from a cultural point of view are known under different names in villages or neighboring regions when it is not in the same village. However, there exists in the ensemble a local classification, which without being precise and exact, reposes nevertheless on certain bases. The groups locally constituted correspond to a size and form or to the color of the husk, or to particular cultural aptitudes or to many of these characteristics at the same time. It seemed interesting to bring together the patronized varieties of great local groups, to give the characteristics of these groups and their limits generally none too precise. These groups correspond to the most cultivated populations. The groups with little importance (notably the groups of round little grains: Cut in the V month, Gi in the X month) have not been described.

Varieties of the V month (very reduced glume)

GROUP OF TEP, CAU, GIE --GRAIN 1/2 LONG WITH CLEAR HUSK

Absolute length varying generally from 7 mm. 9 to 9 mm. 20, exception made for certain populations of Nam-dinh, Ninh-binh: Tep giai, Tep to, with longer grains.

To this group of varieties thus characterized belong numerous populations cultivated in all of the delta, frequently enough in middle land, sometimes low, poor or rich. The populations of this group are appreciated from the commercial point of view and their culture extends at the expense of the populations of the other groups. The principle denominations under which these populations are known are the following: Tep, Gie nam, Cau (Chau in certain regions of Ninh-binh), Giong, Soi, Haiphong, Saigon, Ngau, and sometimes Chanh (Vinh-yen, Phuc-yen, Son-tay, Thai-binh) without it being a fact of difference among these diverse names.

In this group, one finds varieties, with apex and with vegetative organs colored or non colored. The colored forms and non colored forms generally present themselves in a mixture in the populations. Even more they seem to hybridize themselves easily enough between themselves and the reappearance of eliminated forms is frequent enough in the purified types. The patronized varieties belonging to this group are the following: Chiem nam 224, Chiem chanh 225, Soi 226, Tep 212, patronized at Vinh-yen; Chiem chanh 205 and Cau 239 patronized at Phuc-yen; Ngau 12, Chiem chanh 162 patronized at Son-tay, Cau 268 and 269 mixture of lines and Tep 199 patronized at Bac-ninh; Cau 245, Gie 258, Cau 264 patronized at Bac-giang. This last variety being patronized also in the province of Hai-duong with the Giong chiem 351. At Hung-yen the Tep Saigon 229 and Haiphong 306 are patronized; at Thai-binh, the Chiem chanh 290, Te-tep 275 and Cau chiem 317; be it the total of 20 varieties. Among these varieties, only the 225 and the 12 are with apex and colored vegetative organs, the 12 being with a finer grain. All of the other varieties are quite close to one another and distinguish themselves



by their size and form (Cf. table of botanical characteristics). Certain varieties having nearly identical botanical characteristics were conserved, however, being appreciably different from the cultural point of view.

GROUP OF SAI DUONG-- GRAIN 1/2 LONG WITH COLORED HUSK

Absolute length varying generally from 8 mm.20 to 9 mm.30.

The varieties of this group are of similar commercial quality of the preceding ones, but they occupy in the delta culture surfaces clearly less important and cede place to the light husk varieties. They are suited to semi-low and low rice fields, rich and somewhat rich, but often enough they cultivate themselves also in middle rice fields (Chiem ru to Son-tay, Chiem chanh to Hai-duong, etc. . .). One finds in this group varieties resistant to beating down, which is appreciated in the V month. But, on the other hand, one frequently finds fault with an elevated proportion of empty grains. These empty grains having less deep husks are more visible than in the varieties with light husks; the proportion is often no stronger than in this last group. The populations are known under the names: Sai duong, Chiem chanh, sometimes Chiem ru, rarely Chiem dau and Tam.

The populations of this group present in general, as in the preceding group, a mixture in variable proportion of types with colored or uncolored vegetative organs which are separated in the patronized varieties. The patronized varieties classed in this group are Sai duong 109 patronized at Bac-ninh and Bac-giang, Chiem ru 337 patronized at Son-tay, Chiem chanh 198-a patronized at Hai-duong and Chiem chanh 234 patronized at Hung-yen. These four varieties have apices and colored organs. For 337, coloration overflows from the apex in a washed out tint on top of the glumellas. 109 presents quite long barbs. This variety, like 198a has a slightly dissymmetrical glume, a glume more projecting than the two others.

GROUP OF BAU-- GRAIN 1/2 ROUND WITH LIGHT HUSK

Absolute length varying generally from 7 mm.30 to 8 mm.40, exception made for a few populations with longer grain.

The varieties of this group known nearly everywhere under the name of Bau, rarely under the name of Soi and of Hom occupy a culture area which is not very important. Their commercial quality is clearly inferior to that of the varieties of the two preceding groups from the fact of the presence of the more or less profound white body. They are generally suited to the rich and fairly rich rice fields of a lesser altitude than those reserved to the Sai-duong, Chiem chanh but one cultivates them quite frequently in middle rice fields. One finds in this group rustic populations adapted

to acid earth (Thai-binh), to salty earth (Kien-an) and to certain poor regions (Vinh-yen).

The populations of this group present equally a mixture of types with colored or uncolored vegetative organs which are separated in the patronized varieties.

The varieties 1/2 round with colored husk are very rare.

The patronized varieties Bau 160 and 157 patronized at Son-tay, 49 patronized at Hai-duong and 122 patronized at Vinh-yen. Only the first of these varieties presents the apex and the uncolored vegetative organs. The completely colored other three clearly differ from each other by their size and form (Cf. tables of botanical characteristics).

Varieties of the X month (very pronounced glume)

TAM GROUP -- GRAIN 1/2 LONG WITH COLORED HUSK

Absolute length varying generally from 7 mm.60 to 8 mm.80.

Some lines issues of Tam can IXa are of a clearly greater length: paddy and rice are of long form and size.

Known under the common name of Tam, the varieties of this group which are seasonal varieties cover vast areas, above all in the North of the delta, notably in the provinces of Vinh-yen, Phuc-yen, Bac-ninh, Phulang-thuong, Son-tay and North Ha-dong. They are suited to middle rice fields and somewhat rich, certain varieties being better adapted to poor soils than others.

According to the regions the populations carry different names: Tam lun, Tam xoan, Tam nho, Tam nho, Tam trang, Tam cao, Tam can, Tam muon, Tam coi, Tam nghan, Tam do, Tam lap, Tam deo, Gie noi, Gie do, etc. . .

The patronized varieties belonging to this group are the following: Tam lun I, Tam xoan 19, Tam lun 28 patronized at Vinh-yen, Tam-xoan 4, Tam trang 5, Tam noi 1, patronized at Phuc-yen, Tam cao VI, Tam lun IV, Gie noi 33b patronized at Son-tay, Tam can IXa, Tam can IXa mixture of lines, Tam xoan 77a, Tam muon 547 patronized at Bac-ninh, Tam muon VIIId1 and VIIId2 patronized at Bac-Giang, all of these provinces being situated in the North of the delta. These diverse varieties distinguish themselves (Cf. tables of botanical characteristics) by their relative dimensions, particularly Tam can IXa mixture of lines and equally by differences which are quite slight, in the coloration of the glumellas, in the conformation of the panicles (VIIId1 and 33b a little more lax), by the coloration of the pellicle of the caryopsis (notably 28 of rose color). In that which concerns the conformation of the glume, the varieties # I, IV, VI, and IXa mixture of lines present quite a projecting glume, the extremity of

the inferior glumella being often more elongated than the other one. The varieties # IXa, 19 and 28 would present this same characteristic even though the glume might be less projecting, whereas for all of the other varieties the two parts are of the same dimensions.

The Ru XIIc variety lightly perfumed, patronized at Hai-duong is also connected with this group. It clearly distinguishes itself from the preceding ones by the apex and the colored vegetative organs, by the very white pellicle of its rice grain which is very corneous and transparent.

To this very important group of Tam, one can add to it three sub-groups:

Tam thom: grains of a pretty yellow or seasonal varieties,

Tam xoan: very deep ocher grains, late varieties,

Tam den: grains with a brown coloration on a yellow base, late varieties.

The Tam thom and the Tam xoan are varieties of great commercial value that give the very best rice of Tonkin tested by the following qualities: small grains, fine, very corneous and transparent, perfumed and tender with boiling. They require middle lands, fertile, and very fertile or strongly smoked rice fields. It is for this reason and it is also by their quite great adherence to straw which occasions a more laborious picking that they are only cultivated on restricted areas. Let us notice that in certain regions which give to an ordinary Tam the usurped name of Tam xoan in the goal of selling it at a higher price (Vinh-yen, Phuc-yen, Bac-ninh).

The Rice Office selected Tam thom (Tam thom 84b from Bac-ninh and Tam thom 15 from Phuc-yen) and some Tam xoan (Tam xoan XX from Thai-binh) but does not make the "Small Multiplication" from it because of their weak culture bed. It only furnishes the seeds on demand.

The Tam den, sometimes called Gie den, and sometimes Tam nuoc are of current commercial quality and are suited to relatively low rice fields. They are not widespread at all but occupy in certain regions, notably in Ha-dong, quite important areas. They support an excess of water well and certain varieties can resist without great inconvenience a submersion for a few days. The Rice Office will be able to furnish next year to the public seeds of the selected variety 234b Tam den from Ha-dong.

#### GROUP OF VARIETIES WITH LIGHT CHAFF

##### 1. -- Som Group-- precocious varieties

The great majority of precocious varieties (of the rains season) belong to this group. The varieties with colored chaff

(Ba giang, Man gia, Som pay) are little cultivated. The grains are generally of the type 1/2 long. Length variable from 7 mm.20 to 8 mm. 40. Certain ones (Gie 57) belong to the long type. On the other hand, others have quite thick grains (Som sung, Gie som, Gie canh). This group of varieties comprises very precocious varieties, precocious, and semi-precocious. They give in general a rice of first quality, very fine, very transparent, particularly appreciated on the local market and on the Chinese market. They are suited to very high rice fields, high and semi-high quite poor. Their culture bed has a certain importance only in the provinces of Vinh-yen, Phuc-yen, and Bac-giang. The most commonly used names are: Som gi, Som cau, Som dau, Som lun, Som giai, Danh, Mung, Lau, Mo. The denomination Gie is also utilized. (Gie hoa).

The patronized varieties belonging to this group are the following: Gie hoa 24 and Danh II patronized at Vinh-yen -- Som gi 14 and Lua chim 241 patronized at Phuc-yen, Gie 57, Gie hoa 527, Som cau 70a and 70b patronized at Bac-giang. These varieties distinguish themselves by their size and form (Cf. tables of botanical characteristics), the coloration of the pellicle. The panicle of Gie 57 is more lax, even more its glume is clearly projecting and slightly dissymmetrical. The other varieties have the two parts of the glume sensibly equal.

## II. --Group of seasonal and late varieties

In this group one distinguishes late varieties with a fine grain, long or 1/2 long, generally known under the name of Gie nuoc or Gie bun. Certain populations of this group give a very appreciable rice (Gie nuoc from Metri). They are normally suited to low and semi-low lands. One cultivates them on the border of basin-shaped valleys and in the low grounds of the North delta just as the one does the equally late varieties named Hien or Hop, but which have thicker grains, 1/2 long or 1/2 round. Finally, in the low delta one finds seasonal or late varieties with light chaff, but with grains 1/2 long or 1/2 round, often wide with a great internal white body, named Chieu trang, Giong trang, Hin, Muon trang, etc. . . . generally cultivated in middle and low regions.

The patronized varieties belonging to this group are the following: Gie hien 48 and HopVa patronized at Son-tay, Giong trang 186a and Chieu trang XIXc patronized at Thai-binh. These varieties distinguish themselves by their size and form (Cf. table of botanical characteristics). The 48 is more aristated and its glume is more projecting. The 186a quite frequently presents great brown pigments on its glumellas of which the base color is light yellow.

### GROUP OF GIAU -- GRAIN 1/2 ROUND WITH COLORED HUSK

Average length variable generally from 7 mm.80 to 8 mm.80. Some populations are 1/2 long.

This group in the low delta covers vast areas. Its rice is of a lesser commercial quality than that of Tam, because of the white

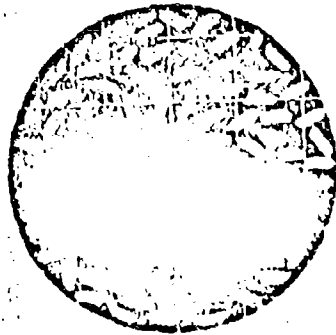
more or less pronounced body. In the regions situated at the limit of the high and low delta (North of Hung-yen and of Hai-duong) the size and form becomes refined and tends towards the type 1/2 long. The most current names are: Giau trang, Giau nghe, Giau ca cuong, Giau lun, Giau hen, Giau bat nao, Giau cao, Giau mo vit. Giau tay co, etc. . . They are seasonal varieties that are suited to average (middle) rice fields, rich or somewhat rich.

To this group is attached the quite important sub-group of Giau den which is suited to the deep rice fields and which the Rice Office does not patronize because of their red pellicles.

The patronized varieties of the Giau group are the following: Giau nghe 154, Giau nghe 558, Quang nghe 125 patronized at Hai-duong, Giau muon XXIII, Giau lun 194a, Giau bat nao 188a and Giau hen 193 patronized at Thal-binh, Giau cao 89b, Giau trang XI line 12 patronized at Hung-yen. These last two varieties are of the type 1/2 long, the 89b being the longest. The other patronized varieties are distinguished by their dimensions (Cf. table of botanical characteristics). The 154 has a more refined and shorter straw than the others, the 194a has a higher straw. The 89b, XI line 12, XXIII, 558 and 194a have a generally dissymmetrical glume, the extremity of the inferior glumella being a little more elongated than the other one.

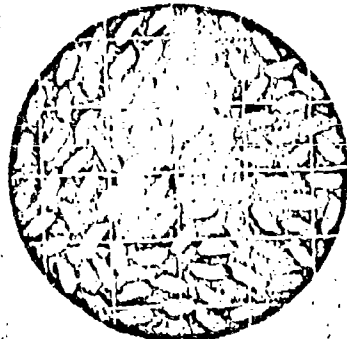
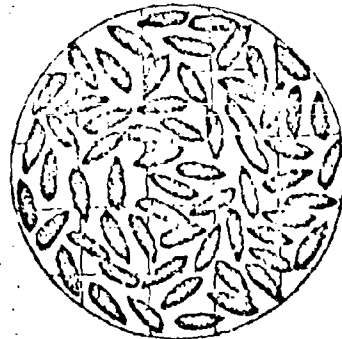
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PLATE I  
PLANCHE I



225 Chiêm châu

122 Hữu

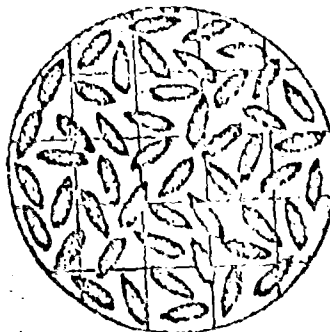


224 Chiêm châu

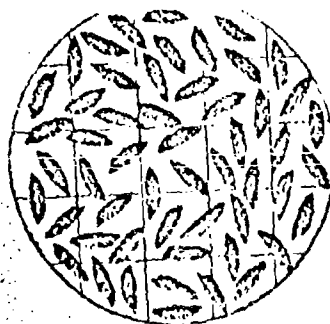
226 Sỏi

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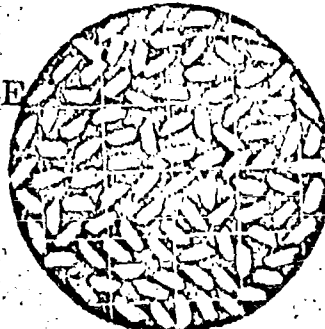
PLANCHE II



242 Chôm lép



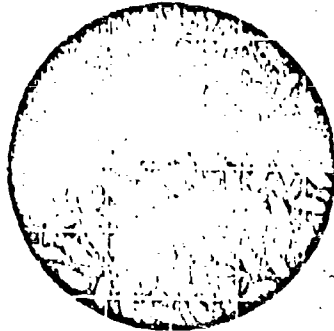
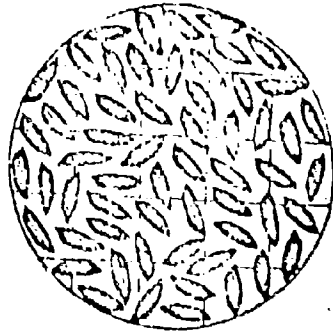
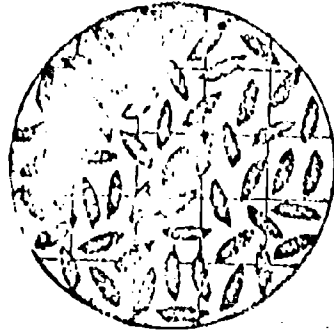
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24 Gié hoa

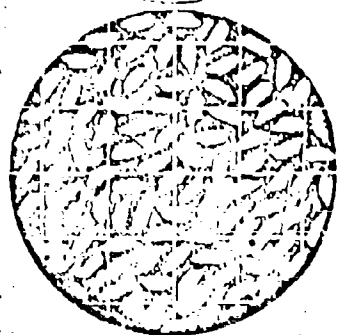
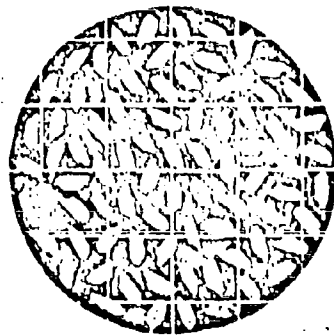
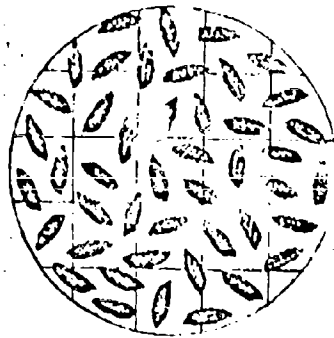
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PLANCHE III



II Dành

19 Tam xoan



I Tam lùn

20 Tam nhỏ ou tam lùn  
or

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I

SELECTED AND PATRONIZED VARIETIES  
FROM THE PROVINCE OF VINH-YEN

---

They are exactly 10 in number.

Varieties of the V month: 5 patronized varieties. Four of them were chosen among 26 purified types originating from 12 local populations gathered up (7 different names). The fifth patronized variety (Tep bau 122) is a native of the province of Thai-binh and underwent with success the tests of comparison and yield.

Varieties of the X month: 5 patronized varieties. They were chosen among 22 purified types originating from 21 local populations gathered together (18 different names).'

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BOTANICAL CHARACTERISTICS OF THE VARIETIES  
 NAMES of the varieties of the population of which the selected variety is the issue

STARCH  
OR  
CELLULOSE



STARCH  
OR  
CELLULOSE

AMYL  
OR  
SARINATE

RED  
OR  
WHITE  
PELLUC

COLORS  
OR  
NEW

CELLULOSE

COLORS  
OR  
NEW  
TYPE

ROUND  
OR  
LONG  
LENG

			STARCH OR CELLULOSE	AMYL OR SARINATE	RED OR WHITE PELLUC	COLORS OR NEW	CELLULOSE	COLORS OR NEW TYPE	ROUND OR LONG LENG
225	Chiêm chanh	Đồng-Cương	Starchy Amidon- neuse	POURTE Aristée	WHITE Blanche	LIGHTLY COLORED Légère- ment colorées	COLORED Coloré	LONG Long	
122	Bầu	Đông-Tu T. H.	id.	id.	id.	id.	id.	1/2 round	
224	Chiêm nam	Vy-Thanh	id.	id.	id.	id.	No color Incolore	1/2 long	
276	Sợi	Yên-Lan	id.	id.	id.	id.	id.	id.	
212	Tép	Thương-Dực	id.	id.	id.	id.	id.	id.	
24	Gie ba	Vân-Đ	Starchy Amidon- neuse	RED Aristée (1)	WHITE Blanche	LIGHTLY COLORED Légère- ment colorées	COLORED Coloré	1/2 long	
11	Dập	Hội-Hợp	id.	id.	id.	id.	id.	id.	
30	Tám xoan	Vân-Đ	id.	id.	id.	Colorees	id.	id.	
1	Tám lùn	Hội-Hợp	id.	id.	id.	id.	id.	id.	
28	Tám nhỏ ou Tám lùn	Yên-Lô	id.	id.	id.	id.	id.	id.	

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PATRONIZED BY THE PROVINCE OF VINH-YEN

PATRONNÉES DE LA PROVINCE DE VINH-YEN

		CARACTÈRES DE DESCRIPTION							
		GRAIN DE PADDY					Grain de riz	Panicles	Observations
espèces de riz	origine	sec	glumes	longueur (mm)	largeur (mm)	coloration des glumelles			
<b>V. mois</b>									
Colorado	Hanoi	Pua prononcé	Normale	875	250	Jaune clair	Pellicule blanche, petit ventre blanc externe	Normales	Pigmentations légères sur le corps des glumelles
Id.	Id.	Id.	Id.	809	303	Id.	Pellicule légèrement rosée, avec gros ventre blanc	Id.	Id.
Id.	Id.	Id.	Id.	833	262	Id.	Pellicule blanche, petit ventre blanc externe	Id.	Id.
Id.	Id.	Id.	Id.	852	267	Id.	Id.	Id.	Id.
Id.	Id.	Id.	Id.	830	260	Id.	Id.	Id.	Id.
<b>X. mois</b>									
Id.	Hanoi	Pua prononcé	Normale	732	248	Jaune clair	Pellicule blanche, petit ventre blanc interne	Normales	Id.
Id.	Id.	Id.	Id.	837	350	Id.	Pellicule légèrement rosée, petit ventre blanc interne	Id.	Pigmentations légères sur le corps des glumelles
Id.	Id.	Id.	Id.	708	250	Coloration brun foncé sur fond jaune ocre	Pellicule blanche, petit ventre blanc interne	Id.	Id.
Id.	Id.	Id.	Id.	708	287	Id.	Pellicule légèrement rosée, petit ventre blanc interne	Id.	Id.
Id.	Id.	Id.	Id.	760	293	Coloration brun clair sur fond jaune ocre	Pellicule rosée, avec gros ventre blanc interne	Id.	Id.

LIGHT PIGMENTATIONS ON THE BODY OF THE GLUMELLS

MANY GRASS DOGS LONG BARBS LIGHT PIGMENTATIONS ON THE BODY OF GLUMELLS

CULTURAL CHARACTERISTICS OF THE VARIETIES

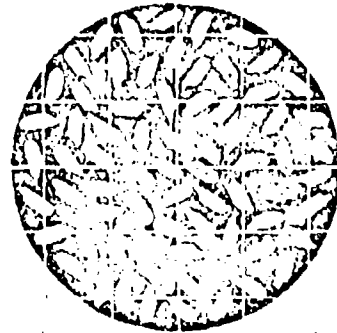
General No.	NAMES of the Varieties	NATURE OF THE RICE FIELDS where the variety is cultivated and area of extension	Quantity of utilized seeds to transplant 1 hectare	Duration of the Nursery
225	Chiem chanh	middle and semi-low rice fields, rich and rich enough with 1 or 2 harvests--Yen Lac, Vinh-Tuong, Tam-Duong.	65 kg.	55 to 75 days
122	Tep bau	semi-low, profound rice fields, somewhat rich and rich with 1 or 2 harvests--Yen Lac, Binh-Xuyen -- Variety introduced from Thai-Binh.	65 kg.	60 to 75
224	Chiem nam	middle r.f. (rice fields) of average richness with 2 harvests--Tam-Duong and Binh-Xuyen.	65 kg.	60 to 75
226	soi	middle r.f. somewhat rich and rich 2 harvests--Binh-Xuyen, Tam-Duong	65 kg.	60 to 75
212	Tep 1 or	middle r.f. & semi-low of average richness 2 harvests Tam-Duong, Vinh Tuong, Yen-Lac.	65 kg.	60 to 75
24	Gie hoa	high r.f. rich with 1 harvest Binh-Xuyen, Tam Duong	45 kg.	40 j.
II	Danh	high r.f., poor and somewhat rich 1 or 2 harvests--Tam-Duong.	45 kg.	40 j.
19	Tam xoan	middle r.f. rich and somewhat rich 2 harvests-- Tam-Duong, Vinh-Tuong	50 kg.	45 j.
I	Tam lun	middle r.f. quite poor and quite rich enough with 1 or 2 harvests Tam-Duong, Vinh-Tuong.	50 kg.	45 j.
28	Tam nho or Tam lun	middle and semi-low r.f. rich enough and rich; 1 or 2 harvests Vinh-Tuong, Yen-Lac, and Tam-Duong.	50 kg.	45 j.

GRAPHIC NOT REPRODUCIBLE

... SELECTED FROM THE PROVINCE OF VINH-YEN

Écartement des touilles au repiquage	Nombre de brins par touille au repiquage	Taille n°	Hauteur moyenne de la paille	Epoque de O.P. semis	Epoque de O.P. repiquage	Epoque de O.P. floraison	Epoque de O.P. récolte	Yields Rendements (1)
0.22-0.25	5 à 7 brins	15	1.01	1 <sup>re</sup> quinzaine de Novembre		AVRIL	2 <sup>e</sup> quinzaine Mai	18 à 24 Qx
0.22-0.25	5 à 7	13	1.23	Id.	2 <sup>e</sup> quinzaine de Décembre	Id.		15 à 24 Qx
0.22-0.25	5 à 7	14	1.10	Id.	1 <sup>re</sup> quinzaine de Janvier et dans le courant de Janvier pour les rizières à 2 récoltes	2 <sup>e</sup> quinzaine Avril	Id.	11 à 14 Qx
0.20-0.25	5 à 7	14	1.10	Id.	2. 15 JUILLET	3 <sup>e</sup> décade Avril	2 <sup>e</sup> quinzaine Mai et début Juin	14 à 21 Qx
0.20-0.25	5 à 7	15	1.23	Id.	1. 15 JUILLET	2 <sup>e</sup> et 3 <sup>e</sup> décade Avril	Id.	14 à 24 Qx
0.20-0.25	4 à 5	12	1.00	Début Juin	1 <sup>re</sup> décade Juillet	Mi-Septembre	Mi-Octobre	9 à 12 Qx
0.20-0.25	4 à 5	14	1.04	2 <sup>e</sup> décade Juin	Fin Juillet	Mi-Octobre	2 <sup>e</sup> décade Novembre	13 à 20 Qx
0.20-0.25	4 à 5	13	1.00	Id.	Id.	Id.	Id.	10 à 16 Qx
0.20-0.25	4 à 5	15	1.01	Id.	Id.	Id.	Id.	15 à 20 Qx

The indicated yields can be obtained in normal conditions. In practice, they can be inferior or superior in more unfavorable situations or in richer lands.



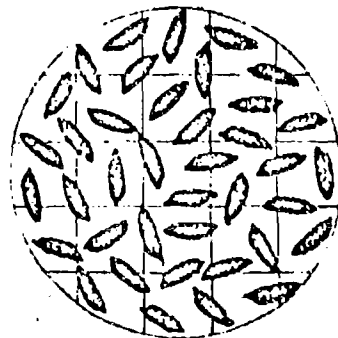
205 Chem chanh

269 Cáu



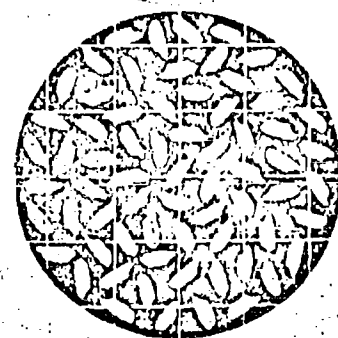
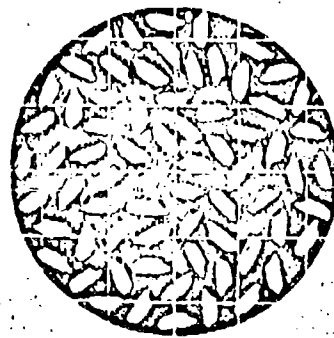
14 Sóm di

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PLANCHE V



241 Lâu chim

6 Tầm sơn



5 Tầm trắng

4 Tầm nôi

II

SELECTED AND PATRONIZED VARIETIES  
FROM THE PROVINCE OF PHUC-YEN

---

They are exactly 7 in number.

Variety of the V month: 2 patronized varieties. One of them was chosen among 10 purified types originating from 4 local populations gathered together (three different names). The other, Chiem cau 269 is a native of Bac-ninh and underwent successfully the tests of comparison and yield.

Variety of the X month: 5 patronized varieties. Four of them were chosen among 28 purified types originating from 21 local populations gathered together (17 different names). The fifth patronized variety is foreign to the province: it showed itself superior to the local varieties in the comparative tests.



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BOTANICAL CHARACTERISTICS OF THE VARIETIES

General No.	General NAMES of the varieties	Village of origin of the population of which the selected variety is the issue	CHARACTERISTICS OF CLASSIFICATION					
			starchy or gummy	mutic or barbat	red or white pellicle	colored or non-color glumellas	colored or non-color apex	Round, 1/2 round 1/2 long
205	Chiêm chanh	Tiền-Tân	Amidon-neuse	Aristée	Blanche	Légère near COLORED	Incolore	1/2 long
269	Chiêm cầu	Tam Sơn H. N.	id.	id.	id.	id.	id.	id.
14	Sơn gi	Cường-Nô	Amidon-neuse	Aristée	Blanche	Légère near COLORED	Incolore	1/2 long
241	Lúa chín	Yên-Định T. H.	id.	id.	id.	id.	id.	id.
4	Tám xoàn	Vân-Trì	id.	id. (1)	id.	Colores	id.	id.
5	Tám trắng	Cường-Nô	id.	id.	id.	id.	id.	id.
1	Tám nõi	Đo-Nhân	id.	id.	id.	id.	id.	id.

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CHARACTERISTICS OF DESCRIPTION

Inces sta- colo- on in	GRAIN DE PADDY					Grain of RICE de riz	Pani- cules	Observations
	bec	glumes	largest 1.100ms	largest 1.100ms	coloration des glumelles			
mois			823	278	Jaune clair	WHITE PELLE- RUE, SMALL WHITE EXTER- NAL BODY.	Normales	Pigmentations légères sur le corps des glumelles
avec	Peu pro- noncé HERBY REMARKED	Normales	823	278	Jaune clair	WHITE PELLE- RUE, SMALL WHITE EXTER- NAL BODY.	Normales	Pigmentations légères sur le corps des glumelles
id.	id.	id.	800	254	id.	id.	id.	id.
mois	VERY							
avec	Très pro- noncé REMARKED	Normales	753	210	Jaune clair	WHITE PELLE- RUE, TRACE OF WHITE INTERNAL BODY	Normales	Pigmentations légères sur le corps des glumelles
id.	id.	id.	838	203	id.	PESE PELLE- RUE, SMALL WHITE INTER- NAL BODY	id.	id.
id.	id.	id.	807	261	TRINK WITH COLOR ON COVER OF THE BASE	WHITE PELLUCIDE, SMALL WHITE INTERNAL BODY	id.	id. (1) Quelques grains portent des barbes assez longues
id.	id.	id.	810	207	TRINK WITH COLOR ON COVER OF THE BASE	id.	id.	id. Some grains have long barbs
id.	id.	id.	857	261	id.	id.	id.	id.

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CULTURAL CHARACTERISTICS OF THE VARIETIES

Numéro général	NOMS des variétés	NATURE DES RIZIÈRES où la variété est cultivée et aire d'extension	Quantité de semences utilisées pour repeupler 1 hectare	Durée de la pépinière
205	Chlâm chanh	MIDDLE + SEMI-LOW RICE, RICH SOILS - 1st HARVEST - YEN-KHONG, PHUC-ANH	60 kg.	60 jours
209	Chlâm cau	MIDDLE + SEMI-LOW RICE, RICH SOILS - 1st HARVEST - YEN-KHONG, PHUC-ANH - SUSCEPTIBLE TO PHILIPINE BROWN BURN DISEASE	60 kg.	60 jours
14	Sôm gi	HIGH RICE, 1st HARVEST - KIM-ANH - WIDE SPREAD VARIETY	45 kg.	34 à 40 jours
241	Lúa chim	MIDDLE + SEMI-HIGH RICE, RICH SOILS - 1st HARVEST - KIM-ANH - WIDE SPREAD VARIETY - SUSCEPTIBLE TO PHILIPINE BROWN BURN DISEASE	45 kg.	35 à 40
4	Tâm xoan	MIDDLE RICE SEMI-RICH SOILS - 1st HARVEST - PHUC-ANH - VARIETY WIDE WIDE SPREAD IN PHUC-YEN SUP.	45 kg.	45 à 55
5	Tâm trắng	MIDDLE RICE SEMI-RICH SOILS - 1st HARVEST - KIM-ANH, PHUC-ANH - VERY CULTIVATED VARIETY IN PHUC-YEN SUP.	45 kg.	45 à 50
1	Tâm nôi	MIDDLE RICE SEMI-RICH SOILS - 1st HARVEST - YEN-KHONG, PHUC-ANH - VERY CULTIVATED VARIETY IN PHUC-YEN SUP.	45 kg.	45 à 50

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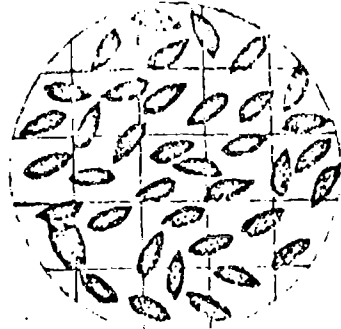
. . . SELECTED FROM THE PROVINCE OF PHUC-YEN

Classe des épis	Nombre de brins par touffe ou repiquage	Taille moyenne	Hauteur moyenne de la paille	Epoque de semis	Epoque de repiquage	Epoque de floraison	Epoque de récolte	Rendements à l'hectare (t)
22-25	6 à 8 brins	17	1, 12	2 <sup>e</sup> et 3 <sup>e</sup> décades Octobre	Fin Décembre début Janvier	Fin Avril début Mai	Fin Mai début Juin	11 à 16 Qx
22-25	6 à 8	19	1, 23	Mi-October début Novembre	Début Janvier	Début Mai	Début Juin	15 à 21 Qx
20-24	3 brins	10	0, 80	Fin Mai	Mi-Juillet	Fin Août 1 <sup>re</sup> décade Septembre	1 <sup>re</sup> décade Octobre	9 à 10 Qx
20	4	10	0, 98	Début Juin	2 <sup>e</sup> et 3 <sup>e</sup> décades Juillet	2 <sup>e</sup> quinzaine Septembre	2 <sup>e</sup> quinzaine Octobre	10 à 15 Qx
23-25	6	14	1, 00	1 <sup>re</sup> et 2 <sup>e</sup> décades Juin	3 <sup>e</sup> décade Juillet - Mi-Août	1 <sup>re</sup> quinzaine Octobre	2 <sup>e</sup> décade Novembre	15 à 20 Qx
22-25	4	14	1, 00	Id.	Id.	Id.	Id.	12 à 20 Qx
22	4	14	0, 95	Id.	Id.	Id.	Id.	15 à 20 Qx

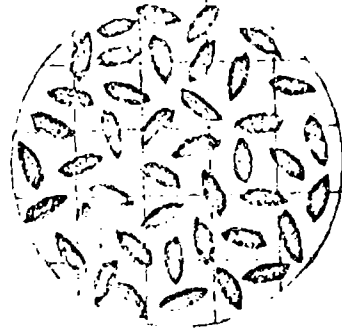
Indicated yields can be obtained under normal conditions. In practice they can be inferior or superior in more unfavorable situations or in better lands.

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PLANCHE VI



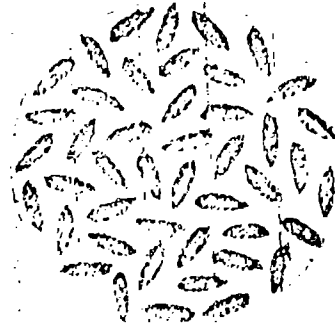
157 Chiem bân



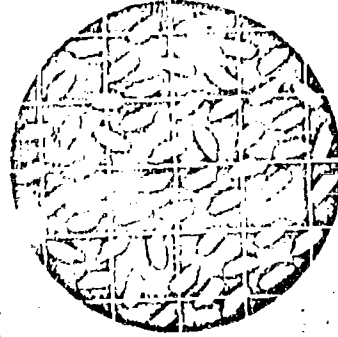
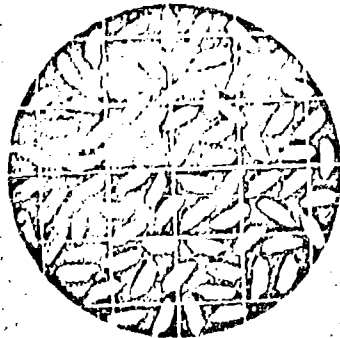
160 Chiem bân



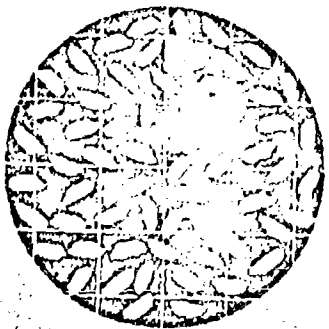
158 Chiem ngân



163 Chiem chanh



GRAPHIC NOT REPRODUCIBLE



III

SELECTED AND PATRONIZED VARIETIES FROM THE  
PROVINCE OF SON-TAY

---

They are exactly 10 in number.

Varieties of the V month: 5 patronized varieties. They were chosen among 32 purified types originating from 13 local populations (7 different names).

Varieties of the X month: 5 patronized varieties. They were chosen among 28 purified types originating from 25 local populations (21 different names). One of these patronized varieties is a native of the province of Ha-dong. It showed itself to be superior to the local varieties in the comparative tests.

GRAPHIC NOT REPRODUCIBLE

BOTANICAL CHARACTERISTICS OF THE VARIETIES

N° général	NOMS et noms des variétés	Village d'origine de la population dont est issue la variété sélectionnée	CARACTÈRES DE CLASSIFICATION					Variétés du	
			Amidon- neuse ou gluante	Matière Aristée Barbue	Pellucide rouge ou blanche	Glumel- les colo- rées ou non	Apex coloré ou non	Zone	long
157	Chiêm lùn	Phong-Tuon	Amidon- neuse	Aristée	Blanche	Légère- ment colorées	Coloré	Zone	
160	Chiêm lùn	id.	id.	id.	id.	id.	Incolore	id.	
12	Chiêm ngàu	Sen-Chiêu	id.	id.	id.	id.	Coloré	long	
162	Chiêm chanh	Lo Nuy	id.	id.	id.	id.	Incolore	12 long	
337	Chiêm tr		id.	id.	id.	Colorées	Coloré	long	
Variétés du									
48	Giê hiên	Dan-Phuong (Hà-Dông)	id.	id.	id.	Légère- ment colorées	Incolore	12 long	
V-a	Hop	Sen-Chiêu	id.	id.	id.	id.	id.	id.	
33-b	Giê nôi	Hoàng-Xô	id.	id.	id.	Colorées	id.	id.	
VI	Tâm cao	Sen-Chiêu	id.	id.	id.	id.	id.	id.	
IV	Tâm lùn	Yên-Vê	id.	id.	id.	id.	id.	id.	



GRAPHIC NOT REPRODUCIBLE

FROM THE PROVINCE OF SON-TAY

Organes végétaux colorés ou non	CARACTÈRES DE DESCRIPTION						Observations	
	CHAIN DE PADDY				coloration des glumelles	Grain de riz		Panicles
	bec	glumes	longueur (1/100mm)	largeur (1/100mm)				
<b>1<sup>er</sup> mois</b>								
<b>Colorés</b>	Peu prononcé	Normales	712	297	LIGHT BROWN Jaune clair	WHITE PLUMBE WHITE DRY WHITE LXXV BODY	normales	LIGHT BROWN on body of GLUMELLES Pigmentations légères sur le corps des glumelles
Incolores	id.	id.	718	307		WHITE PLUMBE SMALL WHITE BROWN	id.	id.
<b>Colorés</b>	id.	id.	889	250	id.	id.	id.	id.
Incolores	id.	id.	830	270	id.	WHITE PLUMBE WHITE PLUMBE BODY	id.	id.
<b>Colorés</b>	id.	id.	803	215	COLORED LIGHT BROWN (1/100mm) BASE	id.	id.	id.
<b>2<sup>e</sup> mois</b>								
<b>Incolores</b>	Très prononcé	id.	831	270	Jaune clair LIGHT YELLOW	VERY WHITE WHITE PLUMBE WHITE BROWN VERY WHITE	id.	Pigmentations grossières sur le corps des glumelles
id.	id.	id.	823	266	id.	VERY WHITE SMALL WHITE INTERMEDIATE BODY	id.	id.
id.	id.	id.	852	253	COLORED LIGHT BROWN on yellow BASE	WHITE PLUMBE SMALL WHITE INTERMEDIATE BODY	id.	id.
id.	id.	id.	839	263	COLORED BROWN ON YELLOW BROWN BASE	id.	id.	id.
id.	id.	id.	857	271	COLORED BROWN ON LIGHT BROWN OTHER CASE	id.	id.	id.

CULTURAL CHARACTERISTICS OF THE VARIETIES

Gen No.	NAMES of the Varieties	NATURE OF THE RICE FIELDS where the variety is cultivated and area of extension	Quantity of seeds utilized to plant 1 hectare	Duration of the Nursery
157	Chiem bau	low and average low r.f. (rice fields) fertile, argillosilicious--Phuc-Tho, Thach-That, Quoc-Oai, Quang-Oai and Tung-Thien--Very widespread variety currently cultivating itself in rich enough r.f.	70 kg.	55-65 days
160	Chiem bau	-id-	70 kg.	id.
12	Chiem ngau	middle r.f., silico-argillicious or argillosilicious, of average fertility--Phuc-Tho, Tung-Thien, Thach-That--Quite widespread variety currently cultivating itself in middle r.f.	70 kg.	id.
162	Chiem chanh	-id-	70 kg.	id.
337	Chiem ru	Middle r.f. and middle low, argillosilicious, quite fertile, in Thach-That and Quoc-Oai--Little cultivated variety, cultivates in quite rich r.f. not too productive but of good quality.	70 kg.	id.
48	Gie hien	Middle and semi-low r.f., argillosilicious, quite rich, in Phuc-Tho, Thach-that, Quang-Oai, Dan-Phuong and Hoan-Long, Quite widespread variety in Ha-dong North.	50 kg.	45-7 days
	V-a Hop	Middle and semi-low r.f., argillosilicious, quite rich, in Phuc-Tho, Thach-That, Quang-Oai, Quoc-Oai and Tung-Thien--widespread variety.	50 kg.	id.
	33-b Gie-noi	Middle r.f., silico-argillicious or argillosilicious, of average fertility in Phuc-Tho, Thach-That, Quoc-Oai, and Tung-Thien (Son-Tay), Dan-Phuong and Hoai-Duc (Ha-dong North)--Widespread variety.	50 kg.	id.
	VI Tam cao	Middle r.f., argillosilicious or silicoargillicious, of average fertility in Phuc-Tho, Tung-Thien, Quang-Oai and Thach-That--Variety quite widespread	50 kg.	id.
	IV Tam lun	-id-	50 kg.	id.

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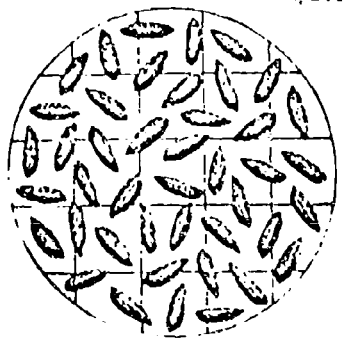
PATRONIZED BY THE PROVINCE OF SON-TAY

carte- sont des suffes repli- quage	Nombre de brins par toulle au repli- quage	Tollage moyen	Manœuvre de la pelle	Epoque de semis 1 <sup>re</sup> Semaine	Epoque de repliquage 1 <sup>re</sup> Semaine	Epoque de floraison 1 <sup>re</sup> Semaine	Epoque de récolte 1 <sup>re</sup> Semaine	Rendements à l'hectare (1)
<b>V<sup>e</sup> mois</b>								
0 <sup>e</sup> 21- 0 <sup>e</sup> 23	5 à 6 brins	11	1,00	2 <sup>e</sup> quinz. Octobre et 1 <sup>re</sup> decade Novembre	de 2 <sup>e</sup> quinzaine Décembre à 1 <sup>re</sup> decade Janvier	2 <sup>e</sup> quinzaine Avril MARS	3 <sup>e</sup> decade Mai à 1 <sup>re</sup> decade Juin	20 à 23 Qx
id.	id.	11	1,10	id.	id.	id.	id.	20 à 23 Qx
id.	id.	11	1,00	id.	de 2 <sup>e</sup> quinzaine Décembre à 2 <sup>e</sup> decade Janvier	id.	id.	18 à 21 Qx
id.	id.	10	0,95	id.	id.	id.	id.	18 à 21 Qx
id.	id.	10	0,85	id.	id.	id.	id.	17 à 20 Qx
<b>X<sup>e</sup> mois</b>								
0 <sup>e</sup> 21- 0 <sup>e</sup> 24	5 à 6 brins	14	1,20	2 <sup>e</sup> quinz. Juin MARS	3 <sup>e</sup> decade Juillet à 3 <sup>e</sup> decade Août	2 <sup>e</sup> quinzaine Octobre	2 <sup>e</sup> quinzaine Novembre	20 à 24 Qx
0 <sup>e</sup> 22- 0 <sup>e</sup> 24	id.	12	1,20	id.	id.	id.	id.	21 à 24 Qx
0 <sup>e</sup> 21- 0 <sup>e</sup> 23	4 à 5	17	1,10	1 <sup>re</sup> quinz. Juin	2 <sup>e</sup> decade Juillet à 1 <sup>re</sup> decade Août	1 <sup>re</sup> decade Octobre	1 <sup>re</sup> quinzaine Novembre	20 à 23 Qx
0 <sup>e</sup> 21- 0 <sup>e</sup> 23	id.	16	1,10	id.	id.	id.	id.	20 à 23 Qx
0 <sup>e</sup> 21- 0 <sup>e</sup> 23	id.	16	1,05	id.	id.	id.	id.	20 à 23 Qx

The indicated yields can be obtained under normal conditions. In practice, they can be inferior or superior in more unfavorable situations or in richer lands.

GRAPHIC NOT REPRODUCIBLE

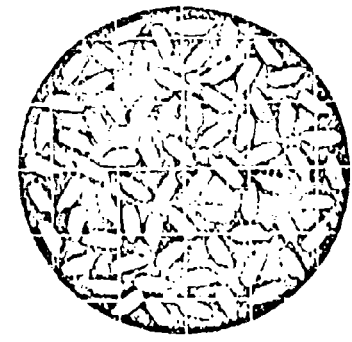
PLANCHE IX



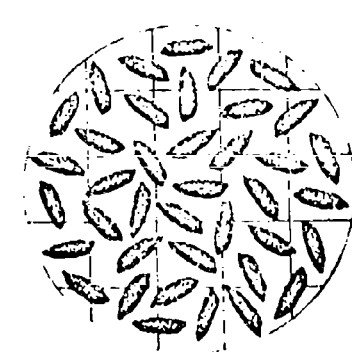
268 Càu



269 a Càu mélange de lignes  
noires et blanches



199 Tép



109 Sài-trung

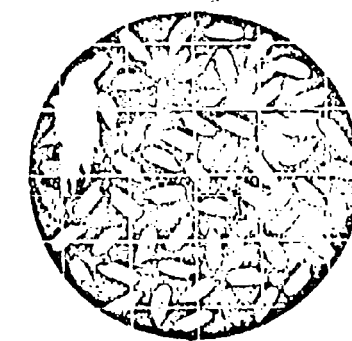
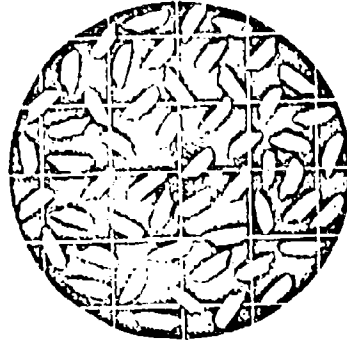
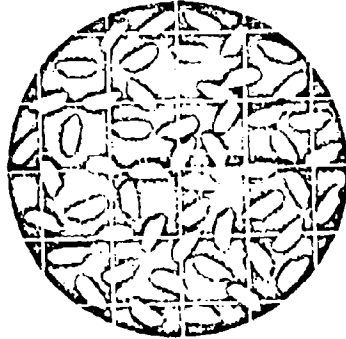
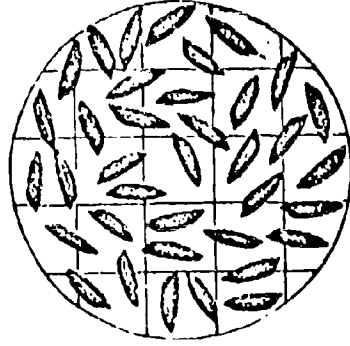
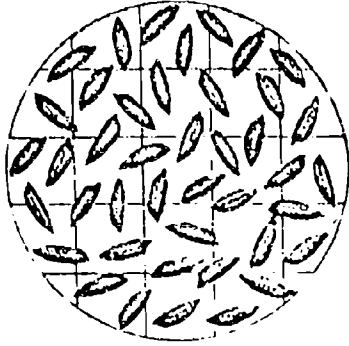
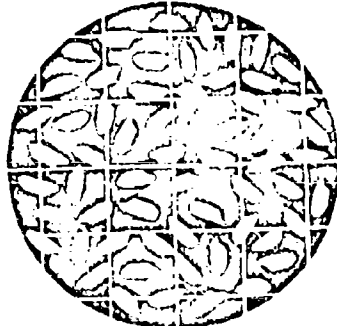


PLANCHE X



IX a Tăm cam

IX a Tăm cam mélange de lignes  
mixtes et fines



77 a Tăm xauu

547 Tăm muon

IV

SELECTED AND PATRONIZED VARIETIES FROM THE  
PROVINCE OF BAC-NINH

---

They are exactly 8 in number.

Varieties of the V month: 4 patronized varieties. Three of them were chosen among 20 purified types originating from 15 local populations (8 different names). One of these patronized varieties (269a Cau) is constituted by a mixture of interesting lines (choice among 46 lines). The fourth patronized variety is a native of the province of Thai-binh; it showed itself superior to the other local varieties in the comparative tests.

Varieties of the X month: 4 patronized varieties. They were chosen among 57 purified types originating from 44 local populations (25 different names). One of the patronized varieties is constituted by a mixture of interesting lines (choice among 24 lines).

BOTANICAL CHARACTERISTICS OF THE VARIETIES

Numéro général	Noms des variétés	Village d'origine de la population dont est issue la variété sélectionnée	CARACTÈRES DE CLASSIFICATION					
			Amidon- neuse ou gluante	Mutique Aristée barbue	Pellicule rouge ou blanche	Glumel- les colo- rées ou non	Apex coloré ou non	Boîte 1/2 ronde 1/2 lon- gue
268	Câu	Hương-Vân	Amidon- neuse	Aristée	Blanche	Légère- ment colorées	Incolore	1/2 longue
269-a	Câu mélange de lignées	Tam-Son	id.	id.	id.	id.	id.	id.
100	Tép	Lang-Tài	id.	id.	id.	id.	id.	id.
100	Sài đường	Huân-Túc T. B.	id.	id.	id.	colorées	Coloré	id.
Variétés du								
IX-a	Tám cọn (type)	Yên-Làng	id.	id.	id.	id.	Incolore	1/2 longue
IX-a	Tám cọn (me- lange de lig.)	id.	id.	id.	id.	id.	id.	longue
77-a	Tám xoan	id.	id.	id.	id.	id.	id.	1/2 longue
547	Tám muộn	Du-Lâm	id.	id.	id.	id.	id.	id.

GRAPHIC NOT REPRODUCIBLE

PATRONIZED BY THE PROVINCE OF BAC-NINH

CARACTÈRES DE DESCRIPTION								
Races géné- tiques d'ores ou non	GRAIN DE PADDY				Coloration des glumelles	Grain de riz	Pani- cules	Observations
	bec	glumes	longueur 100 mm length	largeur 100 mm width				
7 <sup>e</sup> mois								
Inco- lores	Pou pro- noncé	Normales	830	281	Light yel jaune clair	Pellicule blan- che, trace ventre blanc	Normales	Pigmentations légères sur le corps des glumelles
id.	id.	id.	821	250	id.	id.	id.	id.
id.	id.	id.	828	240	id.	Pellicule blan- che, quelques petits ventres blancs	id.	id.
Colorés	id.	id.	865	281	Coloration brune sur fond jaune	id.	id.	(1) Plusieurs grains à barbes assez longues
8 <sup>e</sup> mois								
Inco- lores	Très pro- noncé	id.	831	267	Coloration brun foncé sur fond jaune ocre	Pellicule blan- che, quelques petits ventres blancs internes	id.	
id.	id.	id.	017	243	id.	id.	id.	
id.	id.	id.	849	204	Coloration brune sur fond jaune or	id.	id.	
id.	id.	id.	865	280	Coloration brune sur fond jaune ocre clair	id.	id.	



CULTURAL CHARACTERISTICS OF THE VARIETIES

Gen. No.	NAMES of the varieties	NATURE OF THE RICE FIELDS where the variety is cultivated and the extension area	Quantity of seeds utilized to plant 1 hectare	Duration of the Nursery
268	Cau	middle or semi-low r.f., rich or somewhat rich, sandy, sandy or argillaceous clay--Variety cultivated in all Bac-Ninh North and a part of South Bac-Ninh	52 kg.	60 days
269-a	Cau (mixture of lines)	id-	52 kg.	60 days
199	Tep	middle and semi-low r.f., quite rich, sandy clay--Variety quite widespread in South-East Bac-Ninh	52 kg.	60 days
109	Sai duong	low or semi-low r.f., rich or very rich sandy clay--Variety introduced by Thai-Binh, susceptible to diffusion in South-East Bac-Ninh	54 kg.	60 days
IX-a	Tam can purified type	high and middle r.f., rich or quite rich, sandy or sandy clay Variety cultivated in North Bac-Ninh	32 kg.	45 days
IX-a	Tam can mixture of lines	High and middle r.f., rich, sandy lines or sandy clay. This mixture of lines more esteemed than the purified Tam can type by its more extended grains and its superior commercial quality is susceptible to advantageously replace this last one. Cultivated in North Bac-Ninh.	id.	id.
77-a	Tam xoan	High and middle r.f., rich or quite rich, sandy or sandy clay--Variety cultivated in North Bac-Ninh	id.	id.
547	Tam muon	High and middle r.f., sandy or argillaceous, rich or quite rich. Cultivated in the district of Tu-Son and a part of Gia-Lam	id.	id.

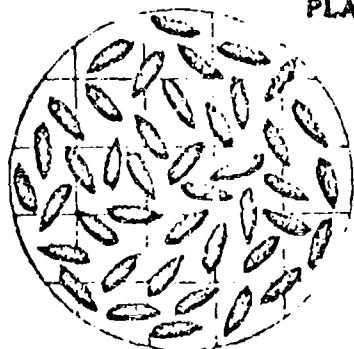
GRAPHIC NOT REPRODUCIBLE

PATRONIZED BY THE PROVINCE OF BAC-NINH

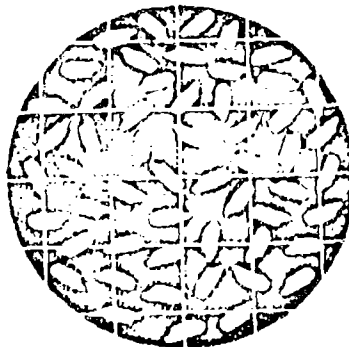
Écartement des siffes à repiquage	Nombre de brins par touffe au repiquage	Tallage moyen	Hauteur moyenne de la paille	Époque de semis	Époque de repiquage	Époque de floraison	Époque de récolte	Rendements à l'hectare (t)
<b>V<sup>e</sup> mois</b>								
0,20-0,25	6 à 7 brins	16	0,90	Fin Octobre	Fin Décembre début Janvier	Fin Avril début Mai	Fin Mai 1 <sup>re</sup> quinzaine Juin	19 à 22 Qx
0,20-0,25	6 à 7	16	0,90	id.	id.	id.	id.	20 à 24 Qx
0,20-0,25	6 à 7	15	0,90	id.	id.	id.	1 <sup>re</sup> décade Juin	18 à 21 Qx
0,20-0,25	7 à 8	15	0,85	id.	Fin Décembre	id.	1 <sup>re</sup> quinzaine Juin	18 à 22 Qx
<b>X<sup>e</sup> mois</b>								
0,23-0,28	4 à 5	10	0,83	2 <sup>e</sup> quinzaine Juin	1 <sup>re</sup> décade Août	2 <sup>e</sup> et 3 <sup>e</sup> décades Octobre	2 <sup>e</sup> et 3 <sup>e</sup> décades Novembre	21 à 25 Qx
id.	id.	22	0,85	id.	id.	id.	id.	23 à 27 Qx
id.	id.	22	0,02	id.	id.	id.	id.	22 à 26 Qx
id.	id.	22	0,88	id.	id.	id.	id.	22 à 26 Qx

The indicated yields can be obtained under normal conditions. In practice, they can be inferior or superior in more unfavorable situations or on richer lands.

PLANCHE XI



264 Ciii

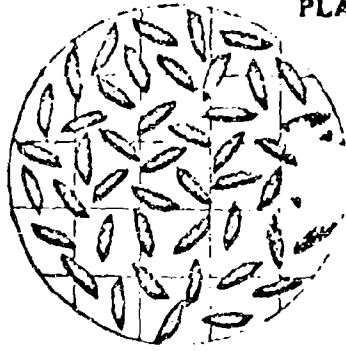


245 Ciii

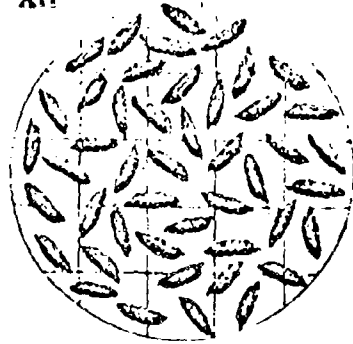


268 Gi6

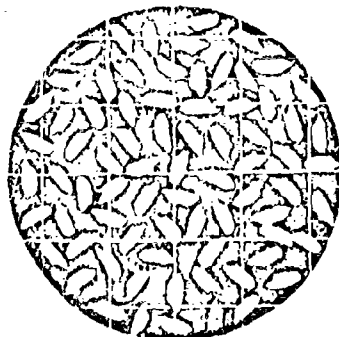
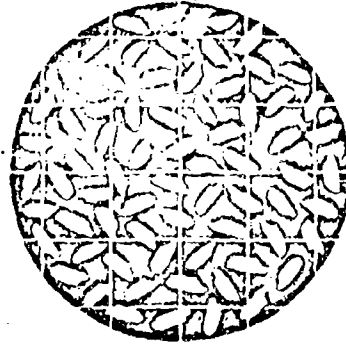
PLANCHE XII



57 Gié

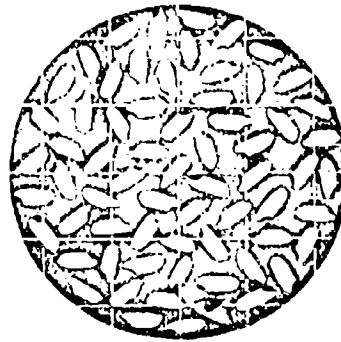
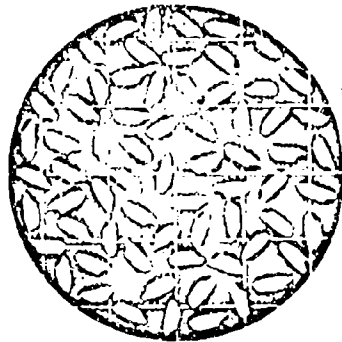
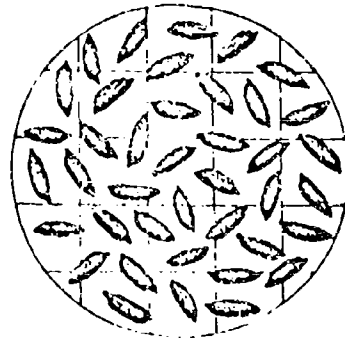
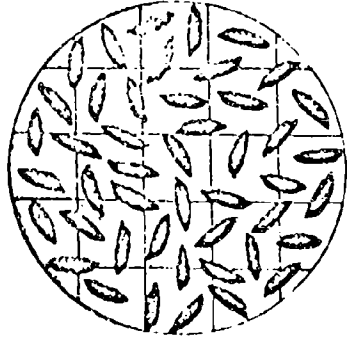


527 Gié hon



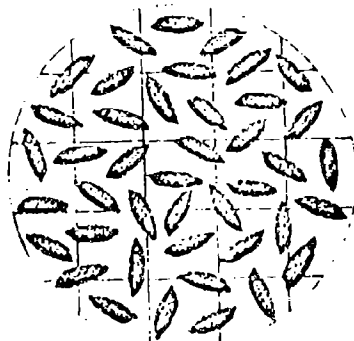
70a Sôru càu

PLANCHE XIII



70 b Sớm cầu

VII d' Tám ruộn



VII đ' Tám ruộn

V

SELECTED AND PATRONIZED VARIETIES FROM THE  
PROVINCE OF BAC-GIANG

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They are exactly 12 in number.

Varieties of the V month: 4 patronized varieties. Three of them were chosen among 53 purified types originating from 15 local populations (9 different names). The fourth patronized variety is a native of the province of Thai-binh; it showed itself to be superior to the local varieties in the comparative tests.

Varieties of the X month: 6 patronized varieties. They were chosen among 78 purified types originating from 65 local populations (37 different names).

GRAPHIC NOT REPRODUCIBLE

BOTANICAL CHARACTERISTICS OF THE VARIETIES

Numero général	NOMS des variétés	Village d'origine de la popula- tion dont est issue la variété sélectionnée	CARACTÈRES DE CLASSIFICATION					
			Amidon- neuse ou gluante	Multique Aristée Barbue	Pellicule rouge ou blanche	Glu- nelles colorées ou non	Apex coloré ou non	Ronde ou longue
201	Câu	Phú-Nuyễn	Amidon- neuse	Aristée	Blanche	Légère- ment colorées	Incolore	1/2 longue
246	Câu	Mai-Hồ	id.	id.	id.	id.	id.	id.
258	Gié	Bình-An	id.	id.	id.	id.	id.	id.
109	Sài Dương	Đoan-Túc T. B.	id.	id. (1)	id.	Colorées	Coloré	id.
57	Gié	Thịnh-Liệt	Amidon- neuse	Aristée	Blanche	Légère- ment colorées	incoloré	longue
527	Gié hoa	Cần-Dinh	id.	id.	id.	id.	id.	1/2 longue
70 <sup>a</sup>	Sớm câu	Sơn-Giao	id.	id.	id.	id.	id.	id.
70 <sup>b</sup>	Sớm câu	Sơn-Giao	id.	id.	id.	id.	id.	id.
VII <sup>a</sup>	Tám muội	Nam-Xương	id.	id.	id.	Colorées	id.	id.
VII <sup>b</sup>	Tám muội	Nam-Xương	id.	id.	id.	id.	id.	id.

GRAPHIC NOT REPRODUCIBLE

PATRONIZED BY THE PROVINCE OF BAC-GIANG

CARACTÈRES DE DESCRIPTION							
GRAIN DE PADDY					Grain de riz	Panicles	Observations
bec	glumes	longueur (1000 mm)	largeur (1000 mm)	coloration des glumelles			
<i>Très peu prononcés</i>	Normales	839	262	Jaune clair	Pellicule blanche, petit ventre blanc externe	Normales	Pigmentations légères sur le corps des glumelles
Id.	Id.	824	265	Id.	Id.	Id.	Id.
Id.	Id.	839	260	Id.	Id.	Id.	Id.
Id.	Id.	865	281	<i>Jaune clair</i>	Id.	Id.	<i>(1) très belles avec long bec</i>
<i>Très prononcés</i>	Normales	817	253	Jaune clair	Pellicule blanche, trace ventre blanc interne	Normales	<i>Long bec ce type très belles</i>
Id.	Id.	820	251	Id.	Id.	Id.	Id.
Id.	Id.	752	245	Id.	Id.	Id.	Id.
Id.	Id.	754	245	Id.	Id.	Id.	Id.
Id.	Id.	841	260	<i>Très belles de couleur très fine</i>	Pellicule blanche, petit ventre blanc interne	Id.	Extrêmement soignées se ressemblent les autres variétés
Id.	Id.	807	257	<i>Très belles de couleur très fine</i>	Id.	Normales	



- 1 -  
**GRAPHIC NOT REPRODUCIBLE**  
**CULTURAL CHARACTERISTICS OF THE VARIETIES**

Numero général	NOMS des variétés	NATURE DES RIZIÈRES ou la variété est cultivée et aire d'extension	Quantity of rads used to PLANT 1 HECTARE	DURATION of THE NURSERY
				<i>Variétés du</i>
261	Câu	Average, rich or quite rich r.f., thick arable bed--Lang-Giang.	60 kg.	60 à 70 jours DAYS
215	Câu	average r.f., thin arable bed, poor--Viet-Yen, Yen-The, Hiep-Hoa.	id.	id.
258	Gié	average r.f. of average richness Poor zone of Lang-Giang, rich zone of Viet-Yen and Yen-Dung.	id.	id.
130	Shi đường	Semi-low or low r.f., quite rich and rich--Lang-Giang and Yen-Dung.	id.	id.
				<i>Variétés du</i>
57	Gié	High, semi-high r.f., average richness or poor--Lang-Giang, Viet-Yen.	55 kg.	40 j.
527	Gié hoa	-id-	id.	40 j.
70-a	Sóm câu	High and very high r.f. of average or poor richness--Viet-Yen, Yen-The, Hiep-Hoa.	id.	35 à 40
70-b	Sóm câu	-id-	id.	id.
VII 41	Tám muôn	Average. quite rich or rich r.f. --Lang-Giang, Hiep-Hoa, Viet-Yen, Yen-The.	id.	45 j.
VII 42	Tám muôn	-id- slightly more productive than Tam muon VII <sup>41</sup> in relatively richer lands.	id.	45 j.

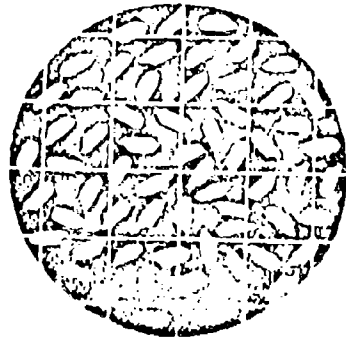
GRAPHIC NOT REPRODUCIBLE

PATRONIZED BY THE PROVINCE OF BAC GIANG

caractéristiques des souches et replantage	Nombre de brins par touffe au replantage			Epoque de semis	Epoque de replantage	Epoque de floraison	Epoque de récolte	Yields (Quantités à récolter)
<b>V<sup>e</sup> mois</b>								
0-20-0-25	3 à 4 brins	10	1-05	Fin Octobre début Novembre	2 <sup>e</sup> quinzaine Janvier	Fin Avril début Mai	Debut Juin	10 à 13 Qx
0-18-0-20	id.	8	0-95	id.	2 <sup>e</sup> décade Janvier	id.	Fin Mai début Juin	10 à 12 Qx
0-20-0-22	id.	10	0-95	id.	2 <sup>e</sup> quinzaine Janvier	id.	id.	14 à 16 Qx
0-22-0-25	id.	11	1-00	id.	id.	id.	id.	18 à 20 Qx
<b>X<sup>e</sup> mois</b>								
0-20-0-22	3 à 4	10	1	Fin Mai début Juin	1 <sup>e</sup> quinzaine Juillet	1 <sup>e</sup> quinzaine Septembre	1 <sup>e</sup> quinzaine Octobre	12 à 13 Qx
0-20-0-22	id.	10	1-05	id.	id.	id.	2 <sup>e</sup> décade Octobre	12 à 13 Qx
0-20	id.	8	0-95	id.	id.	1 <sup>e</sup> décade Septembre	1 <sup>e</sup> décade Octobre	10 à 12 Qx
0-20	id.	8	0-95	id.	id.	id.	id.	10 à 12 Qx
0-22-0-25	id.	12	1-15	2 <sup>e</sup> décade Juin	2 <sup>e</sup> quinzaine Juillet	2 <sup>e</sup> décade Octobre	2 <sup>e</sup> et 3 <sup>e</sup> décades Novembre	14 à 16 Qx
id.	id.	12	1-15	id.	id.	id.	id.	16 à 18 Qx

The indicated yields can be obtained under normal conditions. In practice, they can be inferior or superior in more unfavorable situations or in richer lands.

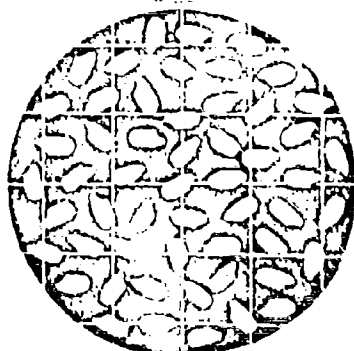
PLANCHE XIV



354 Giang chieu



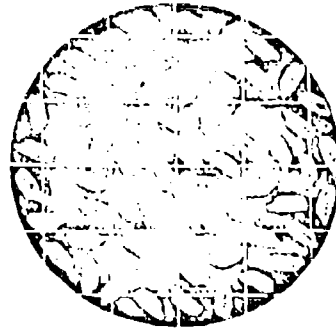
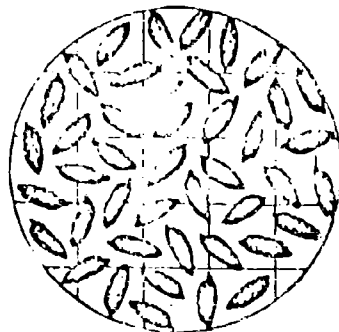
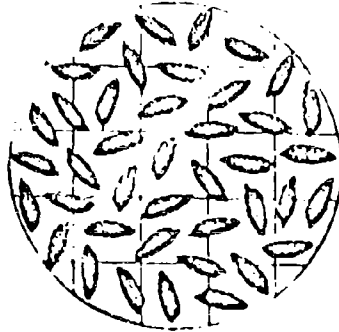
398 a Chiem chunh



49 Bau

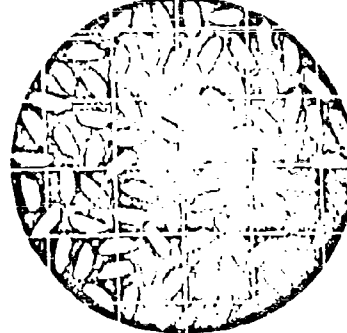
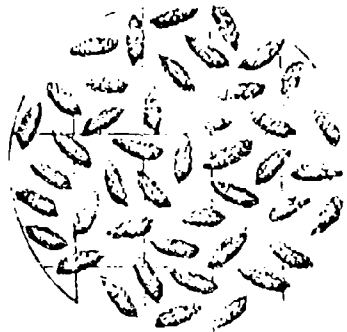
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PLANCHE XV



154 - 156 - 158

558 - 558 - 558



125 - 125 - 125

XII c - XII c

GRAPHIC NOT REPRODUCIBLE

VI

SELECTED AND PATRONIZED VARIETIES  
OF THE PROVINCE OF HAI-DUONG

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They are exactly 8 in number.

Varieties of the V month: 4 patronized varieties. Three of them were chosen among 69 purified types originating from 25 populations which are local (12 different names). The fourth variety is a native of Bac-giang and gave better results than the local varieties in the tests.

Varieties of the X month: 4 patronized varieties. Three of them were chosen among 53 purified types originating from 46 local populations (36 different names). The fourth variety is a native of the province of Hung-yen. Introduced in the tests, it showed itself to be more productive than the local varieties.



1- GRAPHIC NOT REPRODUCIBLE  
PATRONIZED BY THE PROVINCE OF HAI-DUONG

CARACTÈRES DE DESCRIPTION								
Races gêles colorés ou non	GRAIN DE PAUDY				Grain de riz de	Parti- cules	Observations	
	héc	glumes	longeur en mm	largeur en mm				coloration des glumelles
<b>7<sup>e</sup> mois</b>								
colorés	Très pro- noncé	Normales	828	254	Jaune clair	WHITE PELLICLE, TRACE WHITE BODY	Normales	LIGHT PIGMENTATIONS ON THE BODY OF THE GLUMELLAS
id.	id.	id.	839	262	id.	id.	id.	id.
colorés	id.	id.	851	264	BROWN ON YELLOW BASE	WHITE PELLICLE TRACE WHITE BODY	id.	
id.	id.	id.	798	311	LIGHT YELLOW	LIGHT PINK PELLICLE, SOME SMALL WHITE BODIES	id.	LIGHT PIGMENTATIONS ON THE BODY OF THE GLUMELLAS
<b>8<sup>e</sup> mois</b>								
colorés	Très pro- noncé	Normales	811	273	BROWN ON YELLOW OTHER BASE	WHITE PELLICLE, WHITE ENTER RAL BODY	Normales	
id.	id.	id.	830	260	id.	id.	id.	id.
id.	id.	id.	867	304	BROWN ON LIGHT YELLOW OTHER BASE	WHITE PELLICLE, TRACE BIG WHITE LOCAL BODIES	id.	
id.	id.	id.	810	284	BROWN BROWN ON YELLOW OTHER BASE	Very white. PELLICLE, TRACE WHITE BODY	id.	

## CULTURAL CHARACTERISTICS OF THE VARIETIES

Gen. No.	NAMES of the varieties	NATURE OF THE RICE FIELDS where the variety is cultivated and area of extension	Quantity of seeds used to plant 1 hectare	Duration of the Nursery
351	Giong chiem	High and quite high r.f., easily drainable, somewhat rich or rich, argillosilicious, silico-argillicious, alluvial (Tu-Ky, Ninh-Giang, Gia-Loc).	35-47 kg.	60 to 7 days
264	Cau	High and quite high r.f., rich and quite rich, argillosilicious, silico-argillicious, alluvial, clayish (Binh-Giang, Chi-Linh, Nam Sach) Variety introduced from Bac-Giang.	id.	id.
198-a	Chiem chank	High and quite high r.f., rich and quite rich, argillosilicious, silico-argillaceous Nearly all of Hai-duong.	id.	id.
49	Bau	Low, rich and quite rich r.f. argillosilicious, alluvial Nearly all of Hai duong	id.	id.
154	Giau nghe	High and quite high r.f., rich, somewhat rich or poor, argillosilicious, silico-argillaceous, clayish, alluvial (Cam-Giang, Nam Sach, Gia-Loc, Thanh-Ha, Binh-Giang, Kim-Thanh, Kinh-Mon, Dong-Trieu) --Variety introduced from Hung-Yen, very esteemed, susceptible to take a large extension and to advantageously supply local Lua gian.	35-42 kg.	45 to 7 days
558	Giau	Semi-high r.f., argillosilicious, alluvial, quite rich. Later than Giau nghe 154 and supports a thicker bed of water.	id.	id.
125	Quang nghe	High, quite high r.f., argillosilicious, clayish, poor and acid (Binh-Giang, Thanh-Mien)	id.	id.
XII-e	Ru	High r.f., rich or very rich, argillosilicious, silico-argillaceous (Kinh-Mon, Nam-Sach, Chi-Linh, Dong-Trieu, Kim-Thanh, Thanh-Ha, Tu-Ky, Gia-Loc, Ninh-Giang, Vinh-Bao).	id.	id.



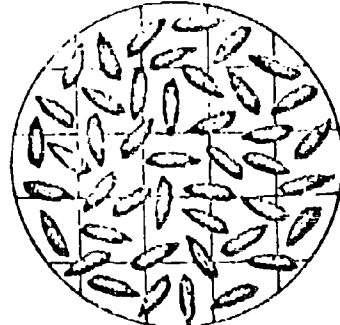
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PATRONIZED BY THE PROVINCE OF HAI-DUONG

arte- il des l'os repl- age	Nombre de brins par bouffe ou repli- quage	Telas moyen	Hauteur moyenne de la paille	Epoque de semis	Epoque de repliquage	Epoque de floraison	Epoque de récolte	Rendement (1)
				15 JUILLET	10 AOUT	1er et 2e DÉC.	10 AOUT	
10 mois	5 à 5 brins	18	1, 17	1 <sup>re</sup> quinz. Novembre	1 <sup>re</sup> quinzaine Janvier	2 <sup>e</sup> et 3 <sup>e</sup> décades Avril	2 <sup>e</sup> quinz. Mai et 1 <sup>re</sup> quinz. Juin	22 à 25 Qx
10	id.	16	1, 15	id.	id.	2 <sup>e</sup> quinzaine Avril	id.	20 à 23 Qx
10	id.	15	1, 1	2 <sup>e</sup> et 3 <sup>e</sup> quinz. Janvier et 1 <sup>re</sup> décade Décembre	1 <sup>re</sup> et 2 <sup>e</sup> quinz. Janvier et 1 <sup>re</sup> décade Février	id.	id.	18 à 21 Qx
X 23	id.	15	1, 11	1 <sup>re</sup> quinz. Novembre	1 <sup>re</sup> et 2 <sup>e</sup> décades Janvier	id.	id.	23 à 25 Qx
X 23	3 à 4 brins	19	1, 2	2 <sup>e</sup> quinz. Mai et 1 <sup>re</sup> quinz. Juin	2 <sup>e</sup> quinzaine Juillet et 1 <sup>re</sup> quinz. Août	1 <sup>re</sup> quinzaine Octobre	1 <sup>re</sup> quinzaine Novembre	24 à 32 Qx
10	id.	15	1, 20	1 <sup>re</sup> quinz. Juin	2 <sup>e</sup> quinzaine Juillet	id.	id.	24 à 27 Qx
10	id.	17	1, 18	id.	id. 1 <sup>re</sup> quinz. Août	id.	id.	24 à 26 Qx
X 23	id.	19	1, 6	id.	id.	1 <sup>re</sup> et 2 <sup>e</sup> décades Octobre	2 <sup>e</sup> et 3 <sup>e</sup> décades Novembre	26 à 31 Qx

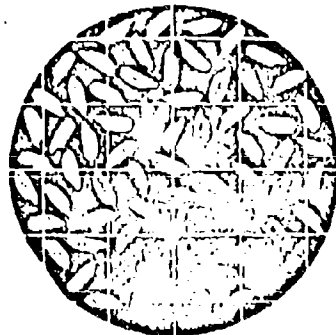
The indicated yields can be obtained under normal conditions. In practice, they can be inferior or superior in more unfavorable situations or in richer lands.

PLANCHE XVI



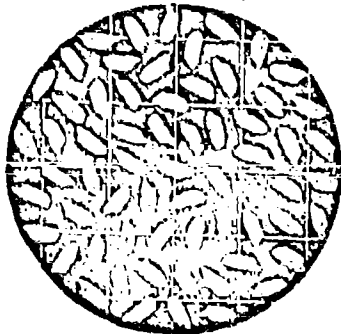
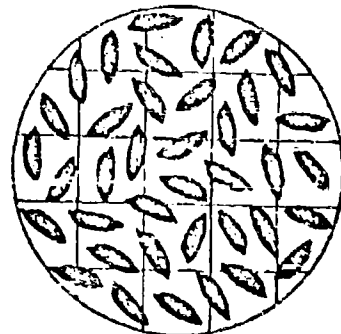
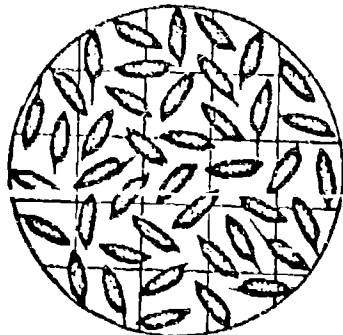
229 Tép Saigon

206 Halphong



234 Chiêm châu

PLANCHE XVII



XI Giàu cao

XI Giàu trắng  
Lignée 12

VII

SELECTED AND PATRONIZED VARIETIES  
FROM THE PROVINCE OF HUNG-YEN

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They are exactly 5 in number.

Varieties of the V month: 3 patronized varieties. Two of them were chosen among 8 purified types originating from 4 local populations (4 different names). The third patronized variety is a native of another province and gave better results than the local varieties in comparative tests.

Varieties of the X month: 2 patronized varieties. They were chosen among 34 purified types originating from 31 local populations (23 different names). One of the varieties is constituted by a line chosen among 50 lines issued from the purified type.

GRAPHIC NOT REPRODUCIBLE

BOTANICAL CHARACTERISTICS OF THE VARIETIES

Numero General	NOMS des variétés	Village d'origine de la population dont est issue la variété sélectionnée	CARACTÈRES DE CLASSIFICATION					
			Amidon-neuse ou gluante	Mutique Aristée Harbue	Pellicule rouge ou blanche	Glumelles colorées ou non	Apex coloré ou non	Ronde 1/2 ronde ou longue
		Village et culture des variétés sélectionnées						
229	Tép Saigon	An-Thi	Amidon-neuse	Aristée	Blanche	Légèrement colorées	Incolore	Id. longue
36	Hảiphong	Vô-Vong-Hu N. D.	Id.	Id.	Id.	Id.	Id.	Id.
231	Chiêm chành	Mỹ-Hào	Id.	Id.	Id.	Colorées	Coloré	Id.
89-h	Giầu cao	Cốc-Phong	Amidon-neuse	Aristée	Blanche	Colorées	Incolore	Id. longue
XI	Giầu trắng lignée 12	Cốc-Phong	Id.	Id.	Id.	Id.	Id.	Id.

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PATRONIZED BY THE PROVINCE OF HUNG-YEN

CARACTERES DE DESCRIPTION							
GRAIN OR PADDY							
bee	glumes	largeur mm	largeur mm	coloration des glumes	Grain de riz	Pan- cules	Observations
		276	272	jaune			
Peu pro- noncé	Normale	276	272	jaune		Cornues	
Id.	Id.	208	271	Id.	Id.	Id.	Id.
Id.	Id.	218	251	Coloration brune sur fond jaune	Id.	Id.	
Très pro- noncé	Normale	281	282			Normale	
Id.	Id.	254	238			Id.	

Numéro Général	NOMS des variétés	NATURE DES RIZIÈRES où la variété est cultivée et aire d'extension	Quantité des semences utilisées pour repiquer 1 hectare	Durée de la pépinière
220	Tép Saigon	Mediocre land, average richness silico-argillaceous or clayish Kim-dong, An-Thi, Tien-Lu-- Variety very cultivated	70 kg.	55 à 65 jours
300	Hảiphong	Average land or a little deep average richness, silico-argillaceous--Kim-Dong, An-Thi, Tien-Lu--Variety introduced from Minh-binh.	id.	id.
234	Chiêm thành	Middle or low land, quite rich clayish--My-Hao, Yen-My--Variety little cultivated, localised above all in Hung-Yen North.	id.	id.
89	Gấu cao	Middle land, average richness silicoargillaceous or clayish Khoai-Chau, An-Thi, Kim-Dong, Tien-Lu--Variety susceptible to replace advantageously the local Gấu trang.	60 kg.	40 à 45 jours
XI	Gấu trắng lignée 12	Middle land, average richness silicoargillaceous or clayish --Khoai-Chau, An-Thi, Kim-Dong Tien-Lu--Very widespread variety.	id.	id.

-66- GRAPHIC NOT REPRODUCIBLE

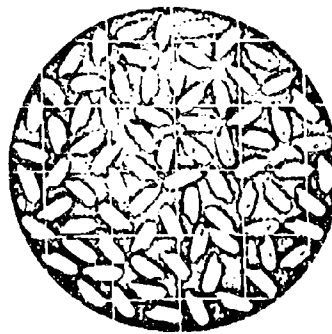
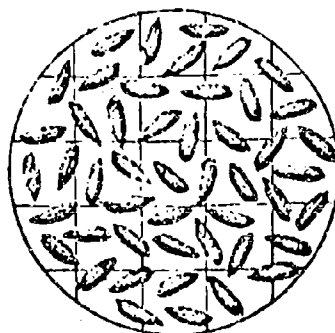
PATRONIZED BY THE PROVINCE OF HUNG-YEN

Nombre de brins par touffe au repiquage	Tallage moyen	Hauteur moyenne de la paille	Epoque de semis	Epoque de repiquage	Epoque de floraison	Epoque de récolte	YIELD IN HUNG-YEN (10) (1000 LBS)
			Septembre	Fin Octobre	Fin Avril	Fin Mai	
à 7 brins	12	1, 08	1 <sup>re</sup> quinzaine Novembre	15 jours Janvier 1 <sup>re</sup> quinzaine Midi-Janvier	Fin Avril 1 <sup>re</sup> quinzaine Mai	Fin Mai 1 <sup>re</sup> quinzaine Juin	16 15 à 17 Qx
Id.	15	1, 10	Id.	Id.	Id.	Debut Juin	14 à 17 Qx
Id.	10	1, 10	Id.	Id.	Id.	Fin Mai debut Juin	14 à 16 Qx
3 à 5	12	1, 18	1 <sup>re</sup> decade Juin Juin	2 <sup>e</sup> et 3 <sup>e</sup> decades Juillet Mi-Juillet	1 <sup>re</sup> quinzaine Octobre	1 <sup>re</sup> quinzaine Novembre	21 à 23 Qx
Id.	11	1, 00	Id.	Id.	Fin Septembre 1 <sup>re</sup> quinzaine Octobre 15 jours Oct.	Id.	20 à 22 Qx

The indicated yields can be obtained under normal conditions. In practice, they can be inferior or superior in more unfavorable situations or in richer lands.

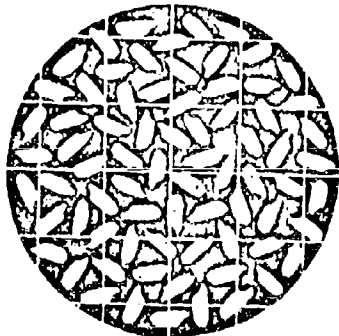


PLANCHE XVIII



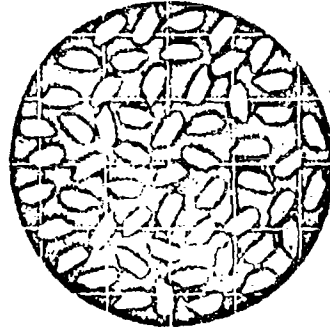
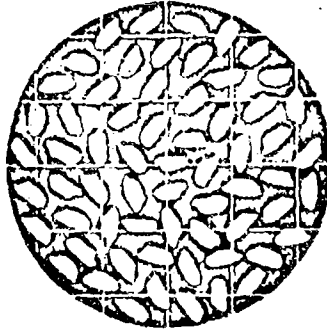
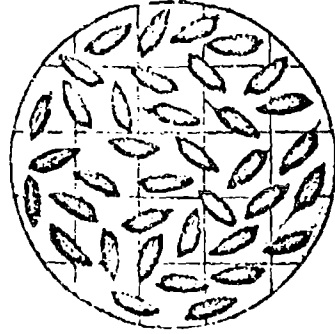
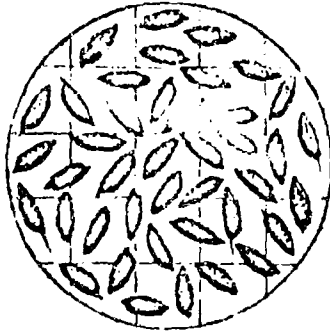
200 Chôm chomh

275 Tép on tề tềp



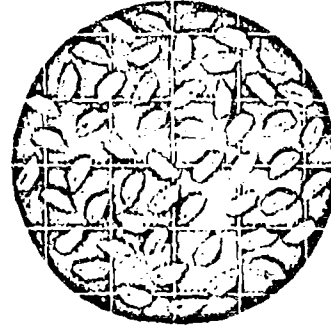
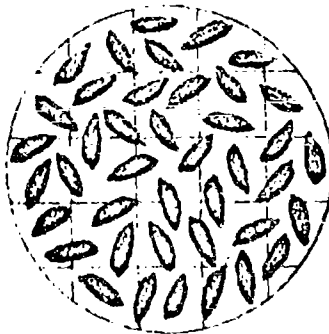
317 Càu chôm

PLANCHE XIX



XXIII Giàu thơm

188 a Giàu hạt gạo

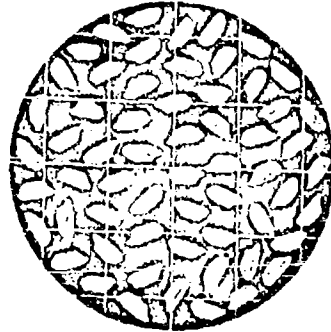
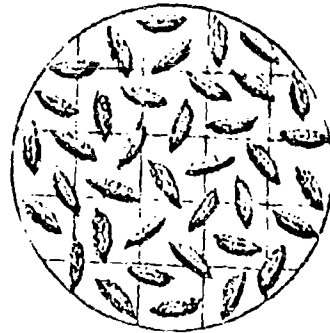


184 a Giàu lúa

193 Giàu nếp

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PLANCHE XX



XIX a Giông trắng

XIX c Giông trắng