疫病に對する免疫性馬鈴薯に就て

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A PRELIMINARY REPORT ON A LATE-BLIGHT RESISTANT STRAIN OF POTATO.*

By

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During the past forty years, the potato has often been introduced from the United States and other countries, and has become one of the most important food and starch-producing plants in our country. Mean-while, the various diseases peculiar to the crop have also been introduced into our country along with its seed-tubers.

To-day, the potatoes in our country are suffering from several diseases, *i.e.* the late blight, early blight, wet rot, dry rot, brown rot, rosette, scab, sprain and filosité. It is beyond a doubt, that among many diseases known to this important crop the late blight is the most destructive pest throughout the world. In our country, the disease was first found in August, 1900 at the farm of the Hokkaidō orphanasylum at Ninaruka, Abutagun, in Prov. Iburi, by Mr. KINTARŌ JIN. It has since been commonly observed to more or less extent in all potato cultivating regions, and when the conditions were favorable to the disease the epidemic outbreak took place frequently.

As the control of this disease several more or less satisfactory preventive means have been proposed, *i.e.* the spraying of the Bordeaux mixture, the planting of sound tubers, the selection of early potatoes and cultivating in the field of well-drained, light or sandy soil, etc. But the safest and most economical method of the prevention is the cultivation of a resistant or immune strain.

In other countries, *e.g.* England, Germany, Holland, the United States and Canada, the attention has already been directed toward this line and the results of

* A more complete report about this strain is reserved for a future publication of the Hokkaidō Agricultural Experiment Station.

these investigations were published in various places. The Hokkaidō Agricultural Experiment Station has also conducted several experiments to obtain such a resistant strain of potato for many years. Most of the work has been done by the senior phytopathologist, the late Mr. YOSHINAO TAKAHASHI, and his assistant Mr. KŌICHI KATSUFUJI. Among the materials collected from the various places of the potato cultivating regions, he found a strain which is the most resistant against the late blight. The strain is customarily known under the Japanese name "*Ekishirazu*".* The writer, who is responsible for the improvement of this strain as one of the works, which fell into his hands as the successor to Mr. TAKAHASHI, takes this opportunity to report here briefly the origin and morphological character of this new strain of potato.

The resistant strain has many local names besides the *Ekishirazu* as above mentioned, *e. g.* *Mubyo-imo* (Disease-proof potato), *Takamakura* (High pillow, meaning no anxiety), *Hibi-imo* (Rough skinned potato), *Aki-imo* (Autumn potato), *Takeuchi-imo* (TAKEUCHI's potato) and *Sojirō-imo* (SOJIRŌ's potato). We could call to mind some characteristics of this potato from these local names.

There is some doubt as to the origin of this strain, but the following statement is at least approximately correct. In about 1903, JIROKICHI IKEDA, the proprietor of the Waseda Nursery, had imported some packets of the seed of potato from a foreign country (France?), and sold it to TEIZŌ KAKUDA, a seedsman at Nishi-Nusamai, Kushiro-city. SOJIRŌ TAKEUCHI, a farmer at Tottori-mura, and HEIHACHI MIYAZAKI, a farmer at Shoro-mura, both in the province of Kushiro, bought this seed from KAKUDA and planted it in the next year. After successive culture of this potato during 2-3 years, these two farmers shared some tubers to their neighbours. Among the progenies of the seedling a resistant variety, now known as the *Ekishirazu* has originated.

From the potatoes, which the farmers are now commonly dealing as "*Ekishirazu*", we have isolated eight strains showing the difference in the characters of tubers and flowers, especially in their relation to the late blight. The description of a strain, which is considered as the true *Ekishirazu* is as follows:—

Season late, very productive. Vines upright, strong; foliage not rich, light green, medium in size and very healthy. Tubers ovoid or ellipsoidal, not flattened; eyes few, small and very shallow; skin within yellow, heavily netted and rough; flesh white, hard. Flowers white, lightly tinged with purple.

* *Eki* — the blight; *shirazu* — don't know.

This resistant *Ekishirazu* is a new distinct strain. In order to determine scientifically the resistant character of this strain, systematic trials in laboratory must be undertaken, but from the practical standpoint it would be sufficient to conclude their resistant quality after a continued field observation in the different soils and climates during many years. We have been receiving many satisfactory reports on this strain from the potato growers in various localities. Moreover, in the experimental plots of our University and Experiment Station in Sapporo the present strain has remained annually until late season standing up well and free from the late blight, while other strains are all affected, though there are various grades in the degree of their susceptibility. Among many strains, Early Rose, Snowflake and Green Mountain are most susceptible, while Royal Kidney, Magnum Bonum and Sir John Lewelyn, the highly resistant strains in England and America, seem to be somewhat susceptible in our districts.

The new strain is not resistant to the early blight and rosette. The early blight occurs in every localities, but is not serious here. The rosette is troublesome in Sapporo but occurs less abundantly in other parts. Finally, one of the defects of this strain is its taste being not so sweet as that of Snowflake. It is needed to

improve its quality by crossing with the better variety. For this purpose, the rich setting of the fruits in this strain is a beneficial character. As such experiments are now being conducted in our station we would have an opportunity to report on the success in producing a commercially desirable disease-resistant strain of the potato in the near future.

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摘 要

本邦に於ける馬鈴薯病害多きが中に疫病の如く惨害を逞くするものなきは海外諸國の例に同じ、本病豫防の方法多しと雖も抵抗性或は免疫性品種の栽培を以て最も安全にして最も經濟的なる方法となすや論なく、北海道農事試験場は多年斯の如き品種の育成に努め故高橋良直氏及び勝藤孝一氏専ら其事に従ひ多數蒐集の材料中より一品種「疫不知」を撰出するに至れり、予は高橋氏の後を受け本種の改良に關係するに至りしを以て今茲に本種の起源竝に性質を記して一般に紹介する所あらんとす。

本品種は疫不知の外、無病薯、高枕、ヒツ薯、秋薯、竹内薯、惣次郎薯等の地方名を有するものにして千九百三年頃早稻田農園主池田次郎吉海外(佛國か)より馬鈴薯種子を購入し釧路町字西幣舞種子商角田定藏に賣却し更に同人は之れを釧路國鳥取村農民竹内惣次郎竝に同國庶路村農民宮崎平八に賣却し兩人は三年乃至六年間栽培育成して後隣人に頒てるもの即ち疫不知種の濫觴たるが如く、然して從來民間にて疫不知と稱しつゝありしものゝ内には塊莖、花部の性質竝に疫病に對する抵抗性に於て相異なるものゝ混ぜるを認め分離して八型を得たり、其内吾等が眞の疫不知として呼ばんと欲するものゝ特性は次の如し。

熟期晩くして豐産、莖は直立し強く、葉は多からずして淡綠、中等大にて强健、塊莖卵形又は橢圓形、扁平ならず、目は少なく、小形にして淺し、皮は白黃色にして著しく網紋ありて粗糙、肉は白色にして堅緻花は白色にして僅かに

紫色を帶ぶ。

本種が疫病に對して抵抗力の強大なるは多年の圃場試験竝に實地家の實驗に徴して明かなり、然れ共夏疫病竝に萎縮病に對しては感受性强きは缺點なれど此兩病被害の程度は疫病と同日の談に非らず、尙本種の缺點と認むべきは其味の雪片種に比して遠く及ばざるにあり、依りて良種と交配し改良をなさんことを企圖し已に北海道農事試験場に於ては之れが試験を行ひつゝあるが故に近く理想的良品種を育成し廣く紹介するの期あるべきを信ず。

「マサキ」の新炭疽病に就て(豫報)

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VORLÄUFIGE MITTEILUNG ÜBER EINE NEUE ANTHRAXNOSE VON EVONYMUS JAPONICA

Von

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Im September des letzten Jahres (1916) entdeckte Herr CH. SUGAYA im hiesigen Laboratorium auf einigen Blättern von *Evonymus japonica* TH., welche er im August des gleichen Jahres in der Nähe von Tokyō gesammelt hatte, einen Pilz, der zur Gattung *Gloeosporium* gehört. Da ich mich seit dem Jahre 1915 mit dem Studium der Anthraknosen in Japan befasse, wies er mir gütigst solche kranke Blätter zur Untersuchung zu. Beim Studium stellte ich den Pilz auch zur Gattung *Gloeosporium*, doch musste ich ihn für eine neue Species halten, weil die Sporengestalt sehr charakteristisch ist. Es gelang mir aber nicht, den Pilz zu isolieren. Im Dezember des gleichen Jahres erhielt ich durch die Güte des Herrn S. TSURUTA eine weitere Sendung gleicher Pilze, diesmal jedoch aus der Shizuoka Präfektur. Trotz der trockenen Exemplare glückte es mir diesmal durch ein besonderes Verfahren, den Pilz zu kultivieren.

In Italien ist bereits von SACCARDO für diese Pflanze eine Pilzart derselben