Naohide HIRATSUKA & Shoji SATO*: **Inoculation experiments with heteroecious species of the Japanese rust fungi (5)****

平塚直秀・佐藤昭二: 日本産異種寄生性銹菌の接種試験 (5)

22. **Melampsoridium Alni** (Thüm.) Dietel

On November 9, 1952, the senior writer collected a large number of leaves of *Alnus firma* Sieb. et Zucc. (Yashabushi) bearing teleutosori of this species at Mt. Ôyama, Sagami Province, for inoculations.

On March 16, the next year, sporidia from those teleutospores were inoculated on needles of *Larix Kaempferi* Sarg. (Karamatsu). Fifteen days after inoculations, pycnidia began to appear, and seven days later aecidiosori appeared on the *Larix* needles. On April 11, return inoculations with the aecidiospores obtained from the preceding experiment were made on leaves of *Alnus firma* and *A. tinctoria* Sarg. var. *obtusiloba* Call. (Yama-hannoki). Twelve days after sowing of the aecidiospores numerous uredosori appeared on the inoculated leaves of *Alnus firma*, while no sign of infection on *Alnus tinctoria* var. *obtusiloba* was to be found.

23. **Melampsoridium Hiratsukanum** S. Ito

The sporidia from teleutospores of this species on leaves of *Alnus tinctoria* var. *obtusiloba* which were collected by the writers at Shôji-2-gôme of Mt. Fuji on October 22, 1952, were inoculated on needles of *Larix Kaempferi* on March 12 of the next year. Sixteen days after inoculations, the pycnidia began to appear, and six days later aecidiosori appeared.

On April 6 of the same year, the aecidiospores forming on needles of *Larix Kaempferi* obtained from the preceding experiment were transferred onto leaves of *Alnus tinctoria* var. *obtusiloba* and *A. firma*. Eight days after sowing of the aecidiospores, uredosori appeared on *Alnus tinctoria* var. *obtusiloba*, while on *Alnus firma* there was no sign of such an appearance.

24. **Uromyces Heimerlianus** Magnus

In May 1949, the senior writer noticed an abundance of aecidiosori on *Eu-*

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** The present paper is a continuation of the previous one which was published under the title, "Inoculation experiments with heteroecious species of the Japanese rust fungi, IV." by the writers in the Botanical Magazine (Tokyo), **64**, 219-222, 1951.

Contributions from the Laboratories of Phytopathology and Mycology, Faculty of Agriculture, Tokyo University of Education, no. 21.

phorbia adenochlora Morr. et Decne. (Nourushi) at Tajimagahara (Tsuchiai-mura, Kitaadachi-gun), Musashi Province, where was grown a number of *Vicia amoena* Fisch. (Tsuru-fujibakama) attacked by *Uromyces Heimerlianus* Magnus. From these field observations the senior writer assumed that there might be a genetic relationship between the aecidiosori on *Euphorbia* and *Uromyces Heimerlianus* on *Vicia amoena*. The writers carried out experiments in order to determine whether such a connection does exist.

The aecidiospores on *Euphorbia adenochlora* which were collected by the writers at Tajimagahara, on May 16, 1953, were inoculated on leaves of *Vicia amoena* on May 19. On the inoculated leaves of *Vicia*, uredosori began to appear on May 24, and its teleutosori on July 3.

By examining the aecidiosori on *Euphorbia adenochlora* and the uredo- and teleutosori produced on *Vicia amoena* by cultures, it is determined with certainty that aecidiosori on *Euphorbia* is the aecidiosorial stage of *Uromyces Heimerlianus* Magnus.

In May to June, 1954, the writers repeated inoculation experiments with the aecidiospores on *Vicia amoena* in the same way as the foregoing experiments, and obtained the same results.

25. **Puccinia Caricis-Bootianae** Hiratsuka, f.

In the early spring of 1951, field observations made by the writers on cliffs of sea-side of Jyôgashima (Misaki-shi), Sagami Province, indicated that an aecidiosorial stage of a rust fungus on leaves of *Farfugium japonicum* Kitamura (*Ligularia tussilaginea* Mak.) (Tsuwabuki) might form its teleutosorial stage on *Carex Boottiana* Hook. et Arn. (Hige-suge). This indication induced them to assume that there might exist a genetic connection between aecidiosori on *Farfugium* and *Puccinia* on *Carex*, and to perform the following experiments.

On June 10, 1953, a lage amount of leaves of *Farfugium japonicum* bearing matured aecidiosori was collected and used as an inoculum. On June 12, the aecidiospores from *Farfugium* were sown on leaves of *Carex Boottiana* which was potted in the laboratory. Three weeks after sowing, a number of uredosori began to appear on the inoculated leaf surfaces, and they developed abundantly day after day. On december 31, teleutospores of *Puccinia* were observed on the same leaves.

In the next spring, the experiment was carried out in order to determine the return infection using as an inoculum the sporidia from the overwintered teleuto-

spores obtained from the preceding inoculation experiments. Sporidia were sown on leaves of *Earfugium japonicum* on April 10, 1954. Ten days after sowing of the spores, pycnidia began to appear on the inoculated leaves of *Farfugium*, and aecidiosori on May 10.

The present fungus was treated by the senior writer as a new species, to which was given the name *Puccinia Caricis-Boottianae* Hiratsuka, f. The original description of this species was published by the senior writer and S. Shimabukuro[1] in 1954.

26. **Leucotelium Pruni-persicae** (Hori) Tranzschel.

The writers collected a number of leaves of *Semiaquilegia adoxoides* Maxim. (Hime-udzu) bearing *Aecidium Semiaquilegiae* Dietel at Jinmuji near Dzushi-shi, Sagami Province on April 15, 1951. Three days later, they inoculated with the aecidiospores on leaves of two cultivated strains of *Prunus Persica* Stokes var. *vulgaris* Maxim. ("Hakuho" and "Wase-tachibana"), potted in the laboratory. About two weeks after inoculation, a number of chlorotic spots began to appear on the inoculated leaves. Some uredosori were to be found on May 22.

In the next year, the following experiment was carried out in order to determine the return infection with teleutospores. Teleuto-material of this species on leaves of *Prunus Persica* var. *vulgaris* was collected by the writers at Shimosoga-mura, Sagami Province on December 7, 1952, and used as an inoculum. On December 12, the leaves bearing the germinating teleutospores were suspended on leaves of *Semiaquilegia adoxoides* which was potted in the laboratory. Plants were covered by a bell-jar for about a month. The inoculated leaves had almost all fallen by late January of the next year, and long slender shoots bearing mycelia were grown from the inoculated plants, at the beginning of February. On march 3, a large number of pycnidia began to appear on the upper surface of leaves, and aecidiosori on March 24.

Further, inoculation experiments were carried out in order to determine the return infection using as inocula the aecidiospores on *Semiaquilegia* obtained from the preceding experiments. Aecidiospores were sown on leaves of *Prunus Persica* var. *vulgaris* which was potted in the laboratory, on April 28. Seventeen days after sowing of the spores, uredosori appeared in abundance on the inoculated leaves. The uredosori obtained from this cultures agreed with those of *Leucotelium*

1) Sci. Bull. Facul. Agric. Univ. Ryukyus, **1**: 26 (1954).

Pruni-Persicae.

The aecidiosorial stage of the present species was treated by the senior writer as a synonym of the former species in 1952.[1)]

○愛媛県のナタオレノキ (山本四郎) Shiro YAMAMOTO: *Osmanthus Zentaroanus* Makino in Ehime Pref., Sikoku.

愛媛県越智(おち)郡高井神(たかいかみ)島はほぼ北緯 34° 11'～12', 東経 133° 16', 瀬戸内海の燧灘で中国本土と四国本土との殆んど中間, 新居浜市北方約 23 粁にある。

ナタオレノキはその東側海辺に大木 1 株 (樹高約 10m, 地上 1 米の部分より二又となり, この部分の周囲 2.6 m, 枝では夫々 1.9 m, 1.4 m) および北端山上に小木 2 株 (地上 1.5 m で夫々周 60 及 70 cm) がある。

この島の附近には小島 2 個がいずれも 4 km 位はなれて存在し, 西方十数 km には大島数個が散在するが, 後者は互いに接近して中国, 四国を連ねているような配置になつているから, 九州, 四国の沿岸を流れる外洋の潮流は直接には影響がない。

植物の種類は島の面積 (約 1.5 平方 km) が小さい割合には豊富で, 羊歯植物以上 200 種を下ることはなかろう。暖地性のものを挙げると, アキニレ, アベマキ, イヌビワ, ウバメガシ, クスドイゲ, コイケマ, センダン, トベラ, ナガバヤブマオ, ナタオレノキ, ハスノハカズラ, ハマホウキギ, ヒロハチシャノキ, マルバグミ, マルバシャリンバイ, ムベ, ヤブツバキ, タキキビ, ノシランなどで, 殊にナタオレノキ, ノシランはこの地方として稀産のものである。

ナタオレノキの分布は文献 2. は本州, 四国, 九州, 対馬, 琉球, 巨文島をあげる。本州, 四国では産地が極めて少なく, 本州で若狭の蒼島, 下関沖の干珠島のみが知られ, また文献 1. および 2. は四国をあげるが, 筆者の知る限りでは, 本報の高井神島のみで, 土佐, 阿波方面にもない。一般に暖地性乃至亜熱帯性植物は四国, 中国では外洋に面した地域に生ずることが多いがナタオレノキは四国の太平洋面になく, この高井神島と干珠島と, 共に瀬戸内海に限られることは注目すべき現象である。

終りに, 四国の産地について, 懇切な御回答を頂いた奥山春季氏及び山中二男氏に厚く感謝の意を表する。 (松山南高等学校)

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1) Journ. Jap. Bot. **27**: 235 (1952).