

## A Preliminary Survey of Rust Fungi (Uredinales) in Ibaraki, Japan \*

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Japan is one of the areas in the world where rust floras are well investigated. Hiratsuka (1960, 1965, 1970) listed up some 770 species of 55 genera of rusts from Hokkaido through Okinawa. Ibaraki is, however, poorly studied for rust flora. Kakishima *et al.* (1976, 1979, 1980) reported rusts and other fungi collected in the Tsukuba area, and these are the only published records of rusts in Ibaraki. This paper reports 129 species (including four varieties) of 23 genera of rusts collected at various localities in Ibaraki, and aims, though by no means complete, at better understandings of the rust flora of Japan.

In the paper, genera and species are arranged in an alphabetical order. The Roman numerals, 0, I, II, and III, denote spermogonial, aecial, uredinial, and telial states in the life cycle, respectively. Y. O. and M. K. in enumeration of collections are abbreviations of Yoshitaka Ono and Makoto Kakishima, respectively. The specimens cited in this paper are deposited in the Mycological Herbarium of Institute of Agriculture and Forestry, University of Tsukuba.

### *Aecidium* Persoon

*A. dispori* Dietel 0, I, on *Disporum sessile* Don., Higashiibaraki-gun, Gozenyama, 10 July 1980, Y. O. ; Mito, 4 June, 1980, Y. O. ; on *D. smilacinum* A. Gray, Mito, 10 May 1980, Y. O. ; 28 June 1980, Y. O. ; Tsukuba-gun, Tsukuba, 8 July 1977, M. K. ; 17 June 1978, M. K.

*A. elaeagni* Dietel 0, I, on *Elaeagnus glabra* Thunb., Kashima-gun, Kashima, 22 Aug. 1981, Y. O.

*A. foetidum* Dietel 0, I on *Mazus miquelii* Makino var. *stolonifer* Nakai, Niihari-gun, Sakura, 18 May 1978, K. Miyasaka.

*A. hydrangiicola* Hennings 0, I on *Hydrangea hirta* Sieb. & Zucc., Kuji-gun,

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Satomi, 10 Aug. 1981, Y. O. ; Tsukuba-gun, Tsukuba, 8 July 1977, M. K. ; 30 Aug. 1978, M. K.

*A. klugkistianum* Dietel 0, I on *Ligustrum obtusifolium* Sieb. & Zucc., Nakaminato, 9 June 1981, Y. O. ; on *L. ovalifolium* Hassk., Nakaminato, 9 June 1981, Y. O.

*A. macroclinidii* Hennings & Shirai 0, I on *Macroclinidium robustum* Maxim., Tsukuba-gun, Tsukuba, 17 June 1976, M.K.

*A. mori* Barclay I on *Morus bombycis* Koidz., Niihari-gun, Sakura, 7 July 1977 M.K. ; 26 July 1977, M. K.

*A. nanocnides* Dietel 0, I on *Nanocnide japonica* Blume, Higashiibaraki-gun, Gozenyama, 24 April 1981, Y. O. ; 22 May 1981, Y. O.

*A. pourthiaee* P. Sydow I on *Pourthiaea villosa* Decne., Niihari-gun, Sakura, 7 July 1977, M. K. ; 26 Juny 1977, M.K.

*A. quintum* P. & H. Sydow 0, I on *Elaeagnus crispa* Thunb., Tsukuba-gun, Tsukuba, 7 July 1979, M. K.

*A. zanthoxyli-schinifolii* Dietel 0, I on *Zanthoxylum piperitum* DC., Tsukuba-gun, Tsukuba, 7 July 1979, M. K.

### *Coleosporium* Leveille

*C. asterum* (Diet.) P. & H. Sydow II, III on *Aster ageratoides* Turcz. ssp. *ovatus* Kitamura, Tsukuba-gun, Tsukuba, 18 Oct. 1977, M. K. ; 30 Aug. 1978, M. K. ; 28 Oct. 1978, M. K. ; Kashima-gun, Kashima, 22 Aug. 1981, Y. O. ; on *A. scaber* Thunb., Kuji-gun, Daigo, 29 Aug. 1980, Y. O. ; Kuji-gun, Satomi, 10 Aug. 1981, Y.O. ; Taga-gun, Juwo, 8 Oct. 1980, Y. O. ; Mito, 28 June 1980, Y. O. ; 9 Aug. 1980, Y.O. ; on *Solidago altissima* L., Higashiibaraki-gun, Oarai, 29 Oct. 1980, Y. O. ; on *S. virgaurea* L., Nakaminato, 13 Sept. 1980, Y. O.

*C. campanulae* Leveille II, III on *Adenophora triphylla* A.DC.var. *japonica* Hara, Kuji-gun, Satomi, 10 Aug. 1981, Y. O. ; Mito, 15 Sept. 1980, Y. O. ; Tsukuba-gun, Tsukuba, 18 Oct. 1977, M. K. ; Niihari-gun, Sakura, 7 June 1975, M. K.

*C. clematidis* Barclay II, III on *Clematis paniculata* Thunb., Taga-gun, Juwo, 8 Oct. 1980, Y. O. ; Naka-gun, Tokai, 13 Sept. 1980, Y. O. ; Tsukuba-gun, Tsukuba, 18 Oct. 1977, M. K. ; 30 Aug. 1978, M. K. ; 31 Oct. 1978, M. K. ; 17 Oct. 1979, Y. O.

*C. clematidis-apiifoliae* Dietel II, III on *Clematis apiifolia* DC., Kuji-gun, Daigo, 29 Aug. 1980, Y. O. ; Tsukuba-gun, Tsukuba, 28 Oct. 1979, M. K.

*C. clerodendri* Dietel II, III on *Clerodendron trichotomum* Thunb., Tsukuba-gun, Tsukuba, 18 Oct. 1977, M. K. ; 31 Oct. 1978, M. K. ; 17 Oct. 1979, Y. O. ; Niihari-gun, Sakura, 31 Oct. 1978, M. K.

*C. horianum* Hennings II, III on *Codonopsis lanceolata* Benth. & Hook.,

f., Tsukuba-gun, Tsukuba, 8 July 1977, M. K.; on *C. ussuriensis* Hemsl., Mito, 8 Aug. 1980, Y.O.

*C. paederiae* Dietel II, III on *Paederia scandens* (Lour.) Merrill var. *mairei* (Lev.) Hara, Kuji-gun, Daigo, 29 Aug. 1980, Y. O.; Naka-gun, Tokai, 13 Sept. 1980, Y. O.; Tsukuba-gun, Tsukuba, 18 Oct. 1977, M. K.; 17 Oct. 1979, Y. O.

*C. perillae* P. Sydow II, III on *Mosla dianthera* Maxim., Niihari-gun, Sakura, 10 Oct. 1974, M. K.; 30 Oct. 1974, M. K.; 9 Oct. 1975, M. K.; 3 Oct. 1977, M. K.; 31 Oct. 1978, M. K., on *M. punctulata* (J. F. Gmel.) Nakai, Mito, 28 June 1980, Y. O.; 15 Sept. 1980, Y. O.; Kashima-gun, Asahi, 15 Sept. 1980, Y. O.; on *Perilla frutescens* Brit. var. *crispa* Dence. f. *purpurea* Makino. Tsukuba-gun, Tsukuba, 18 Oct. 1977, M. K.; on *P. frutescens* Brit. var. *crispa* Decne. f. *viridis* Makino, Tsukuba-gun, Tsukuba, 30 Aug. 1978, M. K.

*C. petasitis* (DC.) Leveille ex Cooke II, III on *Petasites japonicus* Miq., Kuji-gun, Daigo, 29 Aug. 1980, Y. O.

*C. xanthoxyli* Dietel & P. Sydow II, III on *Fagara mantchurica* Honda, Tsukuba-gun, Tsukuba, 17 Oct. 1979, Y. O.; on *Zanthoxylum piperitum* DC., Tsukuba-gun, Tsukuba, 31 Oct. 1978, M. K.

#### *Cronartium* Fries

*C. quercuum* Miyabe ex Shirai II, III on *Quercus dentata* Thunb., Taga-gun, Juwo, 8 Oct. 1980, Y. O.; on *Q. mongolica* Fischer var. *grosseserrata* Rehd. & Wils., Kuji-gun, Daigo, 29 Aug. 1980, Y.O.; on *Q. serrata* Thunb., Taga-gun, Juwo, 8 Oct. 1980, Y. O.; Nakaminato, 13 Sept. 1980, Y. O.; Mito, 28 June 1980, Y. O.; Tsukuba-gun, Tsukuba, 18 Oct. 1977, M. K.; 31 Oct. 1978, M. K.; 17 Oct. 1979, Y. O.; Niihari-gun, Sakura, 10 May 1974, M. K.; 10 Oct. 1974, M. K.

#### *Endophyllum* Leveille

*E. machili* (P. Henn.) Stevens III on *Machilus thunbergii* Sieb. & Zucc., Kashima-gun, Kashima, 22 Aug. 1981, Y. O.

#### *Gymnosporangium* Hedwig, f.

*G. asiaticum* Miyabe ex Yamada 0, I on *Pyrus montana* Nakai var. *rehderi* Nakai, Niihari-gun, Sakura, 19 June 1978, M. K. III on *Juniperus chinensis* L., Niihari-gun, Sakura, 9 April 1981, S. Tezuka.

*G. miyabei* Yamada & I. Miyake 0, I on *Micromeles japonica* Kohene, Tsukuba-gun, Tsukuba, 3 Aug. 1979, T. Sato.

*Hyalopsora* Magnus

*H. polypodii* (Diet.) Magnus II, III on *Athyrium yokoscence* H. Christ., Tsukuba-gun, Tsukuba, 30 Aug. 1978, M. K.; on *Leptogramma totta* J. Sm., Tsukuba-gun, Tsukuba, M. K.

*Kuehneola* Magnus

*K. japonica* (Diet.) Dietel III on *Rosa multiflora* Thunb., Higashiibaraki-gun, Oarai, 8 June 1981, Y. O.; on *R. wichuraiana* Crep., Nakaminato, 29 June 1981, Y. O.; Higashiibaraki-gun, Oarai, 20 Aug. 1980, Y. O.

*Melampsora* Castagne

*M. humilis* Dietel II, III on *Salix integra* Thunb., Tsukuba-gun, Tsukuba, 18 Oct. 1977, M. K.; Niihari-gun, Sakura, 7 June 1975, M. K.

*M. idesiae* Miyabe ex Hiratsuka II, III on *Idesia polycarpa* Maxim., Higashiibaraki-gun, Gozenyama, 6 Sept. 1980, Y. O.; Mito, 15 Sept. 1980, Y. O.

*M. larici-capraearum* Klebahn II, III on *Salix bakko* Kimura, Tsukuba-gun, Tsukuba, 18 Oct. 1977, M.K.

*M. larici-urbaniana* Matsumoto II, III on *Toisusu urbaniana* Kimura, Niihari-gun, Sakura, 9 Oct. 1975, M. K.

*M. magnusiana* Wagner ex Klebahn II, III on *Populus sieboldii* Miq., Tsukuba-gun, Tsukuba, 6 Sept. 1979, M. K.

*Melampsoridium* Klebahn

*M. alni* (Thuem.) Dietel II, III on *Alnus firma* Sieb. & Zucc., Kuji-gun, Daigo, 29 Aug. 1980, Y. O.; Higashiibaraki-gun, Gozenyama, 6 Sept. 1980, Y. O.; on *A. sieboldiana* Matsum., Taga-gun, Juwo, 8 Oct. 1980, Y. O.

*Ochropsora* Dietel

*O. kraunhiae* (Diet.) Dietel 0, I on *Corydalis incisa* (Thunb.) Pers., Mito, 14 May 1980, Y. O.; Niihari-gun, Sakura, 18 May 1978, M. K. II, III on *Wisteria brachybotrys* Sieb. & Zucc., Higashiibaraki-gun, Gozenyama, 6 Sept. 1980, Y. O.; Mito, 10 Aug. 1980, Y. O.; Tsukuba-gun, Tsukuba, 18 Oct. 1977, M. K.; Niihari-gun, Sakura, 31 Oct. 1978, M. K.

*Phakopsora* Dietel

*P. ampelopsidis* Dietel & P. Sydow 0, I on *Meliosma myriantha* Sieb. & Zucc., Kuji-gun, Satomi, 10 Aug. 1981, Y. O.; Tsukuba-gun, Tsukuba, 17 Oct. 1979, Y. O. II, III on *Ampelopsis heterophylla* Sieb. & Zucc. var. *hancei* Planch., Niihari-gun, Sakura, 31 Oct. 1978, M. K.; on *Parthenocissus thunbergii* Nakai, Mito, 10 Aug. 1980, Y. O.; Niihari-gun, Sakura, 11 Nov. 1977,

M. K.; 31 Oct. 1978, M. K.

*P. artemisiae* Hiratsuka II, III on *Artemisia princeps* Pampan., Mito, 15 Sept. 1980, Y. O.; Tsukuba-gun, Tsukuba, 18 Oct. 1977, M. K.; on *Aster ageratoides* Turcz. ssp. *ovatus* Kitamura, Taga-gun, Juwo, 8 Oct. 1980, Y. O.; Nakaminato, 13 Sept. 1980, Y. O.

*P. meliosmae* Kusano II, III on *Meliosma myriantha* Sieb. & Zucc., Tsukuba-gun, Tsukuba, 17 Oct. 1979, Y. O.

*P. pachyrhizi* P. & H. Sydow II, III on *Glycine max* (L.) Merr., Mito, 24 Oct. 1980, Y. O.; on *G. soja* Sieb. & Zucc., Higashiibaraki-gun, Oarai, 29 Oct. 1980, Y. O.; on *Pueraria thunbergiana* Benth., Mito, 23 Sept. 1980, Y. O.

#### *Phragmidium* Link

*P. brevipedicellatum* Hiratsuka, f. II, III on *Potentilla kleiniana* Wight. & Arn., Niihari-gun, Sakura, 6 Sept. 1979, M. K.

*P. griseum* Dietel II, III on *Rubus crataegifolius* Bunge, Kuji-gun, Daigo, 29 Aug. 1980, Y. O.

*P. montivagum* Arthur 0, I, II, III on *Rosa rugosa* Thunb., Niihari-gun, Sakura, 23 Oct. 1979, Y. O.

*P. pauciloculare* (Diet.) P. & H. Sydow II, III on *Rubus parvifolius* L. var. *triphyllus* Nakai, Kashima-gun, Kashima, 22 Aug. 1981, Y. O.; Tsukuba-gun, Tsukuba, 18 Oct. 1977, M. K.; 31 Oct. 1978, M. K.; Niihari-gun, Sakura, 10 Oct. 1974, M. K.; 7 June 1975, M. K.; 31 Oct. 1978, M. K.

*P. rosae-multiflorae* Dietel 0, I, II, III on *Rosa multiflora* Thunb., Kuji-gun, Satomi, 10 Aug. 1981, Y. O.; Kuji-gun, Daigo, 29 Aug. 1980, Y. O.; Higashiibaraki-gun, Gozenyama, 10 July 1980, Y. O.; Mito, 8 May 1980, Y. O. 8 Aug. 1980, Y. O.; 23 Sept. 1980, Y. O.; Tsukuba-gun, Tsukuba, 8 July 1977, M. K.; 18 Oct. 1977, M. K.; 31 Oct. 1978, M. K.; on *R. wichuraiana* Crep., Mito, 28 June 1980, Y. O.; Kashima-gun, Asahi, 15 Sept. 1980, Y. O.;

*P. rubi-thunbergii* Kusano II, III on *Rubus hirsutus* Thunb., Tsukuba-gun, Tsukuba, 7 July 1979, M. K.

#### *Pileolaria* Castagne

*P. klugkistiana* Dietel 0, I, II, III on *Rhus javanica* L., Kuji-gun, Daigo, 29, Aug. 1980, Y. O.; Mito, 4 June 1980, Y. O.; 8 Aug. 1980, Y. O.; 15 Sept. 1980, Y. O.; Tsukuba-gun, Tsukuba, 18 Oct. 1977, M. K.; 31 Oct. 1978, M. K.; 17 Oct. 1979, Y. O.; Niihari-gun, Sakura, 30 Oct. 1974, M. K.; 7 July 1977, M. K., 8 Nov. 1977, M. K.; 31 Oct. 1978, M. K.

*P. shiraiana* (Diet. & Syd.) S. Ito II, III on *Rhus trichocarpa* Miq., Higashiibaraki-gun, Gozenyama, 6 Sept. 1980, Y. O.; Tsukuba-gun, Tsukuba, 17 June 1978, M. K.; 31 Oct. 1978, M. K.

*Puccinia* Persoon

*P. absinthii* (Hedw., f.) De Candolle II, III on *Artemisia princeps* Pampan., Tsukuba-gun, Tsukuba, 18 Oct. 1977, M. K.; Niihari-gun, Sakura, 10 Oct. 1974, M. K.; 30 Oct. 1974, M. K.; 26 July 1977, M. K.; 1 Nov. 1977, M. K.

*P. acetosae* Koernicke II, III on *Rumex acetosa* L., Mito, 5 July 1981, Y. O.

*P. allii* (DC.) Rudolphi II (III) on *Allium fistulosum* L., Niihari-gun, Sakura, 7 July 1977, M. K.; 26 July 1977, M. K.

*P. aomoriensis* P. & H. Sydow 0, I on *Atractylis ovata* Thunb., Mito, 28 June 1980, Y. O.; on *A. lyrata* Sieb. & Zucc., Tsukuba-gun, Tsukuba, 17 June 1978, M. K. II, III on *Carex lanceolata* Boot., Tsukuba-gun, Tsukuba, M. K.

*P. arundinellae-anomalae* Dietel II, III on *Arundinella hirta* Tanaka var. *ciliata* Koidz., Tsukuba-gun, Tsukuba, 18 Oct. 1977, M. K.; 31 Oct. 1978, M. K.

*P. brachypodii* Otth II, III on *Brachypodium sylvaticum* Beauv. var. *miserum* Koidz., Tsukuba-gun, Tsukuba, 8 July 1977, M. K.

*P. caricis-blepharicarphae* Hiratsuka, f. ex S. Ito & Maruyama 0, I on *Smilax china* L., Mito, 28 June 1980, Y. O.; Niihari-gun, Sakura, 19 June 1978, M. K.

*P. caricis-macrocephalae* Dietel II (III) on *Carex pumila* Thunb., Kashima-gun, Ohno, 1 Sept. 1980, Y. O.

*P. chrysanthemi* Roze II, III on *Chrysanthemum morifolium* Ramat. var. *sinense* Makino, Mito, 6 July 1981, Y. O.; Tsukuba-gun, Tsukuba, 30 Aug. 1978, M. K.; Niihari-gun, Sakura, 31 Oct. 1978, M. K.

*P. cirsii* Lasch II, III on *Cirsium* sp., Tsukuba-gun, Tsukuba, 18 Oct. 1977, M. K.

*P. convolvuli* Castagne II, III on *Calystegia soldanella* Roem. & Schult., Nakaminato, 13 Sept. 1980, Y. O.; Kashima-gun, Ohno, 1 Sept. 1980, Y. O.

*P. coronata* Corda 0, I on *Berchemia racemosa* Sieb. & Zucc., Tsukuba-gun, Tsukuba, 17 June 1978, M. K.; Niihari-gun, Sakura, 22 June 1977, M. K. II, III on *Avena stiva* L., Niihari-gun, Sakura, 4 July 1978, M. K.; on *Brachypodium sylvaticum* Beauv. var. *miserum* Koidz., Tsukuba-gun, Tsukuba, 18 Oct. 1977, M. K.; on *Calamagrostis arundinacea* Roth. var. *brachytricha* Hack., Niihari-gun, Sakura, 26 March 1977, M. K.; 31 Oct. 1978, M. K.

*P. crepidis-japonicae* Dietel 0, I, II, III on *Youngia japonica* (L.) DC., Mito, 4 June 1980, Y. O.; Niihari-gun, Sakura, 7 June 1975, M. K.; 19 June 1978, M. K.

*P. dianthi-japonici* Hennings II, (III) on *Dianthus japonicus* Thunb., Kashima-gun, Ohno, 1 Sept. 1980, Y. O.

*P. dieteliana* P. Sydow 0, I, III on *Lysimachia clethroides* Duby, Kuji-gun, Daigo, 29 Aug. 1980, Y. O.; Higashiibaraki-gun, Gozenyama, 6 Sept. 1980, Y. O.; Mito, 28 June 1980, Y. O.; 23 Sept. 1980, Y. O.; 28 Sept. 1980, Y. O.; Tsukuba-gun, Tsukuba, 8 July 1977, M. K.; 18 Oct. 1977, M. K.; 17 June

1978, M. K.; 30 Aug. 1978, M. K.; 28 Oct. 1978, M. K.; 31 Oct. 1978, M. K.; 17 Oct. 1979, Y. O.; on *L. fortunei* Maxim., Niihari-gun, Sakura, 30 Oct. 1974, M. K.

*P. diplachnicola* Dietel II, III on *Cleistogenes hackeli* Honda, Tsukuba-gun, Tsukuba, 31 Oct. 1979, M. K.

*P. elytrariae* Hennings III on *Justicia procumbens* L., Mito, 15 Sept. 1980, Y. O.; 23 Sept. 1980, Y. O.

*P. ferruginosa* P. & H. Sydow III on *Artemisia princeps* Pampan., Nakaminato-13 Sept. 1980, Y. O.; Mito, 8 Aug. 1980, Y. O.; 23 Sept. 1980, Y. O.; 28 Sept. 1980, Y. O.; Niihari-gun, Sakura, 4 Dec. 1974, M. K.; 7 June 1975, M. K.

*P. glechomatis* De Candolle III on *Glechoma hederacea* L., Mito, 15 Sept. 1980, Y. O.; 28 Sept. 1980, Y. O.; on *Meehanian urticifolia* Makino, Tsukuba-gun, Tsukuba, 18 Oct. 1977, M. K.

*P. hemerocallidis* Thuemen II (III) on *Hemerocallis longituba* Miq., Kuji-gun, Daigo, 28 Aug. 1980, Y. O.; Mito, 6 Sept. 1980, Y. O.; 15 Sept. 1980, Y. O.

*P. hibayamensis* Y. Morimoto 0, I on *Cardiocrinum cordatum* (Thunb.) Makino Mito, 14 May 1980, Y. O.; 4 June 1980, Y. O.

*P. hieracii* Martius II, III on *Picris japonica* Thunb., Tsukuba-gun, Tsukuba, 18 Oct. 1977, M. K.; 31 Oct. 1978, M. K.

*P. horiana* Hennings III on *Chrysanthemum morifolium* Ramat. var. *sinense* Makino, Niihari-gun, Sakura, 16 Dec. 1975, M. K.; 26 July 1977, M. K.; on *Chrysanthemum* sp., Nakaminato, 3 Oct. 1980, Y. O.

*P. infra-aequatorialis* Joerstad II (III) on *Cirsium tanakae* Matsum., Higashi-ibaraki-gun, Gozenyama, 6 Sept. 1980, Y. O.; Mito, 15 Sept. 1980, Y. O., on *C. ? nipponicum* Makino, Kuji-gun, Daigo, 28 Aug. 1980, Y. O.

*P. japonica* Dietel III on *Anemone flaccida* Fr. Schm., Mito, 14 May 1980, Y. O.

*P. kusanoi* Dietel 0, I on *Deutzia crenata* Sieb. & Zucc. f. *angustifolia* Rgl., Tsukuba-gun, Tsukuba, 2 June 1979, M. K. II, III on *Arundinaria chino* (Fr. & Sav.) Makino, Tsukuba-gun, Tsukuba, 31 Oct. 1979, M. K., Niihari-gun, Sakura, 31 Oct. 1978, M. K.

*P. lactucae-debilis* Dietel II, III on *Ixeris dentata* (Thunb.) Nakai, Mito, 28 June 1980, Y. O.; on *Ixeris* sp., Kuji-gun, Daigo, 29 Aug. 1980, Y. O.

*P. lactucae-denticulatae* Dietel II, III on *Paraixeris denticulata* Nakai, Kuji-gun, Daigo, 29 Aug. 1980, Y. O.; Tsukuba-gun, Tsukuba, 31 Oct. 1978, M. K.

*P. lactucae-repentis* Miyabe & Miyake I, III on *Ixeris repens* A. Gray, Naka-gun, Tokai, 13 Sept. 1980, Y. O.; Nakaminato, 13 Sept. 1980, Y. O.; Kashima-gun, Ohno, 1 Sept. 1980, Y. O.

*P. linosyridi-caricis* Ed. Fischer 0, I on *Aster scaber* Thunb., Mito, 28 June 1980, Y. O.

*P. magnusiana* Koernicke 0, I on *Ranunculus quelpaertensis* (Lev.) Nakai Mito, 4 June 1980, Y. O. II, III on *Phragmites communis* Trin., Niihari-gun, Sakura, 30 Oct. 1974, M. K.; 9 Oct. 1975, M. K.; 16 Dec. 1975, M. K.; 31 Oct. 1978, M. K.

*P. malvacearum* Montagne III on *Althaea rosea* Cav., Mito, 6 July 1981, Y. O.; on *Malva sylvestris* L. var. *mauritiana* Mill., Mito, 6 July 1981, Y. O.

*P. microsora* Koernicke II, III on *Carex* sp., Mito, 11 Aug. 1980, Y. O.

*P. microspora* Dietel II, III on *Hemarthria japonica* Roschev., Niihari-gun, Sakura, 7 Nov. 1978, M. K.

*P. minussensis* Thuemen 0, I, II, III on *Lactuca indica* L. var. *laciniata* (O. Kuntze) Hara, Mito, 4 June 1980, Y. O.; 28 June 1980, Y. O.; 9 Aug. 1980, Y. O.; 11 Aug. 1980, Y. O.; 20 May 1981, Y. O.; Niihari-gun, Sakura, 10 Oct. 1974, M. K.; 31 Oct. 1978, M. K.

*P. miscanthi* Miura 0, I on *Plantago asiatica* L., Niihari-gun, Sakura, 10 May 1974, M. K.; 7 June 1975, M. K. II, III on *Imperata cylindrica* Beauv. var. *koenigii* Durand & Schinz., Niihari-gun, Sakura, 31 Oct. 1978, M. K.; on *Miscanthus sinensis* Anders., Niihari-gun, Sakura, 10 Oct. 1974, M. K.; 30 Oct. 1974, M. K.

*P. nigroconoidea* Hino & Katsumoto 0, I on *Akebia quinata* (Thunb.) Decne, Mito, 8 Aug. 1980, Y. O.; on *A. trifoliata* Koidz., Mito, 28 June 1980, Y. O.

*P. nipponica* Dietel III on *Salvia nipponica* Miq., Higashiibaraki-gun, Gozenyama, 10 July 1980, Y. O.; Mito, 15 Sept. 1980, Y. O.; 23 Sept. 1980, Y. O. Tsukuba-gun, Tsukuba, 8 July 1977, M. K.; 18 Oct. 1977, M. K.; 30 Aug. 1978, M. K.; 28 Oct. 1978, M. K.; Kashima-gun, Kashima, 22 Aug. 1981, Y. O.

*P. nishidana* Hennings II (III) on *Cirsium* sp., Kuji-gun, Daigo, 29 Aug. 1980, Y. O.; Mito, 23 Sept. 1980, Y. O.

*P. nolitangeris* Corda II, III on *Impatiens textori* Miq., Kuji-gun, Satomi, 10 Aug. 1981, Y. O.

*P. oenantes-stoloniferae* S. Ito II (III) on *Oenanthe stolonifera* DC., Higashiibaraki-gun, Oarai, 29 Oct. 1980, Y. O.; Mito, 4 June 1980, Y. O.; Niihari-gun, Sakura, 26 July 1977, M. K.

*P. orbicula* Peck & Clinton II, III on *Prenanthes acerifolia* Matsum., Kuji-gun, Satomi, 10 Aug. 1981, Y. O.

*P. osmorrhizae* Cooke & Peck 0, I, II, III on *Osmorhiza aristata* Makino & Yabe, Higashiibaraki-gun, Gozenyama, 22 May 1981, Y. O.

*P. oxalidis* Dietel & Ellis II, III on *Oxalis corymbosa* DC., Mito, 5 July 1981, Y. O.; Tsukuba-gun, Tsukuba, M. K.

*P. pachycephala* Dietel III on *Veratrum maackii* Regel var. *japonicum* (Baker) T. Shimizu, Kuji-gun, Daigo, 29 Aug. 1980, Y. O.

*P. polygoni-amphibi* Persoon II, III on *Polygonum cuspidatum* Sieb. & Zucc.,



Mito, 4 June 1980, Y. O.; Tsukuba-gun, Tsukuba, 8 July 1977, M. K.; on *P. filiforme* Thunb. var. *noefiliforme* (Nakai) Ohwi, Mito, 10 Aug. 1980, Y. O.; on *P. multiflorum* Thunb., Mito, 11 Aug. 1980, Y. O.; on *P. thunbergii* Sieb. & Zucc., Mito, 10 Aug. 1980, Y. O.; Tsukuba-gun, Tsukuba, 18 Oct. 1977, M. K.

*P. pulchella* Ono & Kakishima I on *Viola grypoceras* A. Gray, Higashiibaraki-gun, Gozenyama, 3 May 1979, T. Sato; on *V. hondoensis* W. Beck. & Boiss., Higashiibaraki-gun, Gozenyama, 22 May 1981, Y. O.; on *V. yezoensis* Maxim., Higashiibaraki-gun, Gozenyama, 3 May 1979, T. Sato; 22 May 1981, Y. O. II, III on *Carex aphanolepis* Fr. & Sav., Higashiibaraki-gun, Gozenyama, 14 March 1980, M. K. (type specimen); 6 Sept. 1980, Y. O.

*P. recondita* Roberge ex Desmazieres 0, I on *Clematis paniculata* Thunb., Mito, 28 June 1980, Y. O. II, III on *Agropyron* sp., Niihari-gun, Sakura, 7 July 1977, M. K.; on *Triticum aestivum* L., Niihari-gun, Sakura, 3 July 1978, M. K.

*P. rufipes* Dietel II, III on *Imperata cylindrica* Beauv. var. *koenigii* Durand & Schinz., Niihari-gun, Sakura, 30 Oct. 1974, M. K.; 4 Dec. 1974, M. K.

*P. seijoensis* Hiratsuka, f. & S. Sato 0, I on *Pertya glabrescens* Sch.-Bip., Tsukuba-gun, Tsukuba, 17 June 1978, M. K.; on *P. scandens* (Thunb.) Sch.-Bip., Mito, 27 May 1980, Y. O.; 28 June 1980, Y. O.; Tsukuba-gun, Tsukuba, 8 July 1977, M. K.; 17 June 1978, M. K.; 31 Oct. 1978, M. K. II, III on *Carex conica* Boott., Tsukuba-gun, Tsukuba, M. K.

*P. sessilis* Schneider ex Schroeter 0, I on *Polygonatum falcatum* A. Gray, Mito, 10 May 1980, Y. O.; 27 May 1980, Y. O. II, III on *Phalaris arundinacea* L. var. *genuina* Hack., Higashiibaraki-gun, Gozenyama, 6 Sept. 1980, Y. O.; Niihari-gun, Sakura, M. K.

*P. violae* (Schum.) De Candolle 0, I, II, III on *Viola eizanensis* Makino, Tsukuba-gun, Tsukuba, 17 Oct. 1979, Y. O.; on *V. grypoceras* A. Gray, Kuji-gun, Satomi, 10 Aug. 1981, Y. O.; Kuji-gun, Daigo, 29 Aug. 1980, Y. O.; Higashiibaraki-gun, Gozenyama, 6 Sept. 1980, Y. O.; Mito, 8 May 1980, Y. O.; 14 May 1980, Y. O.; 10 Aug. 1980, Y. O.; Kashima-gun, Kashima, 22 Aug. 1981, Y. O.; on *V. hondoensis* W. Beck. & Boiss., Higashiibaraki-gun, Gozenyama, 6 Sept. 1980, Y. O.; Mito, 8 May 1980, Y. O.; 10 Aug. 1980, Y. O.; on *Viola* sp., Tsukuba-gun, Tsukuba, 18 Oct. 1977, M. K.

*P. xanthii* Schweinitz III on *Xanthium strumarium* L., Nakaminato, 13 Sept. 1980, Y. O.

*P. zoysiae* Dietel 0, I on *Paederia scandens* (Lour.) Merrill var. *mairei* (Lev.) Hara, Mito, 4 June 1980, Y. O.; Niihari-gun, Sakura, 30 Oct. 1974, M. K.; 7 June 1975, M. K. II, III on *Zoysia japonica* Steud., Niihari-gun, Sakura, M. K.

#### *Pucciniastrum* Otth

*P. agrimoniae* (Diet.) Tranzschel II, III on *Agrimonia pilosa* Ledeb. var. *ja-*

*ponica* Nakai, Kuji-gun, Daigo, 29 Aug. 1980, Y. O.; Mito, 28 June 1980, Y. O., Tsukuba-gun, Tsukuba, 18 Oct. 1977, M. K.; Niihari-gun, Sakura, 10 Oct. 1974, M. K.

*P. boehmeriae* P. & H. Sydow II, III on *Boehmeria spicata* Thunb., Tsukuba-gun, Tsukuba, 18 Oct. 1977, M. K.; 30 Aug. 1978, M. K.

*P. kusanoi* Dietel II, III on *Clethra barbinervis* Sieb. & Zucc., Kuji-gun, Daigo, 29 Aug. 1980, Y. O.; Tsukuba-gun, Tsukuba, 17 Oct. 1979, Y. O.

*P. miyabeaenum* Hiratsuka II, III on *Viburnum furcatum* Blume, Tsukuba-gun, Tsukuba, 18 Oct. 1977, M. K.; 17 Oct. 1979, Y. O.

*P. potentillae* Komarov II, III on *Potentilla centigrana* Maxim. var. *japonica* Maxim., Higashiibaraki-gun, Gozenyama, 10 July 1980, Y. O.; 6 Sept. 1980, Y. O.; Kashima-gun, Kashima, 22 Aug. 1981, Y. O.

#### *Pucciniostele* Tranzschel & Komarov

*P. clarkiana* (Barcl.) Dietel I, III on *Astilbe thunbergii* Miq., Tsukuba-gun, Tsukuba, 17 Oct. 1979, Y. O.

*P. mandshurica* Dietel I, III on *Astilbe microphylla* Knoll, Kuji-gun, Daigo, 29 Aug. 1980, Y. O.

#### *Stereostратum* Magnus

*S. corticioides* (Berk. & Br.) Magnus III on *Pleioblastus simoni* Nakai, Tsukuba-gun, Yatabe, 2 May 1979, A. Nakagiri.

#### *Thekopsora* Magnus

*T. rubiae* Komarov II (III) on *Rubia cordifolia* L. var. *munjista* Miq., Kashima-gun, Kashima, 22 Aug. 1981, Y. O.

#### *Tranzschelia* Arthur

*T. cohaesa* (Long) Arthur 0, I, III on *Anemone psuedo-altaica* Hara, Higashiibaraki-gun, Gozenyama, 24 April 1981, Y. O.

*T. pruni-spinosae* (Pers.) Dietel II (III) on *Prunus* sp., Higashiibaraki-gun, Gozenyama, 10 July 1980, Y. O.

#### *Uredinopsis* Magnus

*U. kameiana* Faull II, III on *Pteridium aquilinum* Kuhn. var. *japonicum* Nakai, Niihari-gun, Sakura, 6 Sept. 1979, M. K.

*U. pteridis* Dietel & Holway ex Dietel II, III on *Pteridium aquilinum* Kuhn. var. *japonicum* Nakai, Tsukuba-gun, Tsukuba, 18 Oct. 1977, M. K.

*Uredo* Persoon

*U. caricis-incisae* S. Ito II on *Carex incisa* Boott., Tsukuba-gun, Tsukuba, 30 Aug. 1978, M. K.

*Uromyces* Link

*U. amurensis* Komarov II, III on *Maackia amurensis* Rupr. & Maxim. var. *buergeri* (Maxim.) C. K. Schn., Kuji-gun, Daigo, 29 Aug. 1980, Y. O.

*U. caricis-brunnea* Y. Morimoto II, III on *Carex brunnea* Thunb. var. *nakiri* Ohwi, Tsukuba-gun, Tsukuba, 8 April 1981, M. K.

*U. commelinae* Cooke II (III) on *Commelina communis* L., Mito, 11 Aug. 1980, Y. O.; Tsukuba-gun, Tsukuba, 18 Oct. 1977, M. K.; 30 Aug. 1978, M. K.; Niihari-gun, Sakura, 10 Oct. 1974, M. K.; 9 Oct. 1975, M. K.

*U. dactylidis* Otth var. *poae* (Rabenh.) Cummins II, (III) on *Alopecurus aequalis* Sobol. var. *amurensis* Ohwi, Niihari-gun, Sakura, 7 June 1975, M. K.; 19 June 1978, M. K.

*U. durus* Dietel II (III) on *Allium nipponicum* Fr. & Sav., Tsukuba-gun, Tsukuba, 11 April 1979, M. K.

*U. erythronii* (DC.) Passerini 0, I, III on *Erythronium japonicum* Makino, Higashiibaraki-gun, Gozenyama, 19 March 1981, Y. O.; Mito, 8 May 1980, Y. O.; 9 April 1981, Y. O.; Tsukuba-gun, Tsukuba, 25 April 1978, M. K.

*U. ervi* Westendorp II, III on *Vicia sativa* L., Mito, 4 June 1980, Y. O.

*U. lespedezae-procumbentis* (Schw.) Curtis var. *itoanus* (Hiratsuka, f.) Hiratsuka, f. II, III on *Kummerovia striata* (Thunb.) Schnindl., Tsukuba-gun, Tsukuba, 31 Oct. 1978, M. K.; Niihari-gun, Sakura, 10 Oct. 1974, M. K.; 30 Oct. 1974, M. K.; 16 Dec. 1975, M. K.; 26 July 1977, M. K.; 11 Nov. 1977, M. K.; 31 Oct. 1978, M. K.; Kashima-gun, Kashima, 22 Aug. 1981, Y. O.

*U. lespedezae-procumbentis* (Schw.) Curtis var. *lespedezae-procumbentis* II, III on *Lespedeza bicolor* Turcz. var. *japonica* Nakai, Kuji-gun, Daigo, 29 Aug. 1980, Y. O.; Higashiibaraki-gun, Gozenyama, 6 Sept. 1980, Y. O. Tsukuba-gun, Tsukuba, 18 Oct. 1977, M. K.; 31 Oct. 1978, M. K.; Niihari-gun, Sakura, 7 Aug. 1974, M. K.; 10 Oct. 1974, M. K.; 30 Oct. 1974, M. K.; 9 Oct. 1975, M. K.; 16 Dec. 1975, M. K.; on *L. crytobotrya* Miq., Tsukuba-gun, Tsukuba, 17 Oct. 1979, Y. O.; on *L. cuneata* G. Don, Tsukuba-gun, Tsukuba, 31 Oct. 1978, M. K.; Niihari-gun, Sakura, 30 Oct. 1974, M. K.; 9 Oct. 1975, M. K. 31 Oct. 1978, M. K.; on *Lespedeza* sp., Taga-gun, Juwo, 8 Oct. 1980, Y. O.; Tsukuba-gun, Tsukuba, 17 Oct. 1979, Y. O.

*U. muehlenbergiae* S. Ito II (III) on *Muehlenbergia japonica* Steud., Tsukuba-gun, Tsukuba, 18 Oct. 1977, M. K.

*U. polygoni-aviculariae* (Pers.) Karsten II, III on *Polygonum aviculare* L., Higashiibaraki-gun, Oarai, 8 July 1981, Y. O.; Niihari-gun, Sakura, 26 July

1977, M. K.

*U. rudbeckiae* Arthur & Holway II on *Solidago virgaurea* L., Kuji-gun, Satomi, 10 Aug. 1981, Y. O.; Mito, 28 June 1980, Y. O.; 23 Sept. 1980, Y. O.; Tsukuba-gun, Tsukuba, 18 Oct. 1977, M. K.; 30 Aug. 1978, M. K.

*U. sphaerocarpus* P. & H. Sydow II, III on *Indigofera psuedo-tinctoria* Matsum., Naka-gun, Tokai, 13 Sept. 1980, Y. O.

*U. viciae-fabae* (Pers.) Schroeter var. *viciae-fabae* II, III on *Vicia faba* L., Niihari-gun, Sakura, 7 April 1979, K. Katsuya.

#### *Xenodochus* Schlechtendal

*X. carbonarius* Schlechtendal I, III on *Sanguisorba officinalis* L., Niihari-gun, Sakura, 10 May 1974, M. K.; 7 June 1975, M. K.; 7 July 1977, M. K.

#### References

- Hiratsuka, N. 1960. A provisional list of Uredinales of Japan proper and the Ryukyu Islands. *Sci. Bull. Div. Agric. Home. Econ. Engin., Univ. Ryukyus*, 7, 189-341.
- 1965. Additions and corrections to "A provisional list of Uredinales of Japan proper and the Ryukyu Islands", (1960)- I. *Trans. Mycol. Soc. Japan*, 4, 47-51.
- 1970. Additions and corrections to "A provisional list of Uredinales of Japan proper and the Ryukyu Islands", (1960)- II. *Rept. Tottori Mycol. Inst. (Japan)*, 8, 45-51.
- Kakishima, M., K. Katsuya, and S. Sato. 1976. List of fungi collected in the Tsukuba area. I. *Environmental Studies of Tsukuba*, 1, 54-56.
- , ——— and ——— 1979. List of fungi collected in the Tsukuba area. II. *Environmental Studies of Tsukuba*, 4, 105-112.
- , ——— and ——— 1980. List of fungi collected in the Tsukuba area. III. Ustilaginales and Uredinales. *Environmental Studies of Tsukuba*, 5A, 72-79.