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Source: *Bulletin of Miscellaneous Information (Royal Botanic Gardens, Kew)*, Vol. 1909, No. 9 (1909), pp. 369-376

Published by: Springer on behalf of Royal Botanic Gardens, Kew

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LIV.—ADDITIONS TO THE WILD FAUNA AND FLORA
OF THE ROYAL BOTANIC GARDENS, KEW : X.

PHANEROGAMS.

RUBI.

R. A. ROLFE and A. B. JACKSON.

Thirteen species of *Rubus* were recorded as indigenous to the Royal Botanic Gardens by the late Mr. G. Nicholson in 1906 (*Kew Bulletin*, Addl. Ser. V. pp. 78, 79). A study of the extensive thickets in the Queen's Cottage grounds made during August, 1908, convinced us that the list was not complete, and this led to a set of Rubi being collected and forwarded to the Rev. W. Moyle Rogers, the well-known authority on the genus and author of the Handbook of British Rubi. At his suggestion the search was continued during the present season, and a second set was forwarded to him, and his critical notes are here incorporated with our own.

It will be seen that seven additional forms have been obtained, without including two hybrids to be mentioned later, making an aggregate of 20 out of a total of 101 recognised as British in the Handbook; a very good proportion for so restricted an area. Two of those previously enumerated we have been unable to find, though in one case this probably arises through a change of name, but as no specimen has been found in the Herbarium the point cannot be cleared up. The work in such an intricate genus involved a re-comparison of the whole of the material, both in the grounds and the Herbarium, and as the previous conclusions were to some extent modified, we have included all the forms found, the additions being indicated by an asterisk.

There are two forms which neither Mr. Rogers nor ourselves have been able to identify, which are believed to be of hybrid origin, though we fail to find them among the numerous hybrids recorded by Focke and others. The subject is one on which much has been written, though the widest difference of opinion still exists among botanologists. It is certain that some Rubi which have been described as species or varieties are natural hybrids, but no adequate method of testing the question has yet been found. The sterility of certain forms is often accepted as evidence of hybridity, but while probably a very good guide in itself it does not go far enough, for some hybrids which have been raised in gardens between very distinct species are fully fertile, and would be treated as species if found wild and their origin unknown. Such plants usually show unmistakable resemblances to both parents, and if their origin were unknown and the parents belonged to distinct groups, differences of opinion might arise as to which section they should be placed in. Analogous cases appear among British Rubi. Another fact is now known, namely that the offspring of hybrids when self-fertilised may revert more or less in the direction of either or both parents, so much as to obscure their common origin. The principle might be applied to testing the possible origin of certain fertile forms which show such perplexing resemblances to diverse species as to obscure their real affinity.

Certain it is that the British species of *Rubus* often grow intermixed or in close proximity, and that the pollen is widely distributed by numerous industrious bees, as may be observed on any sunny day. The intermediate character of many of the forms and the tendency to vary is notorious, so much so that in some cases it becomes difficult or even impossible to distinguish them. Further, the frequent occurrence of forms intermediate between well-marked species which happen to grow intermixed of itself suggests hybridity, and these intermediate forms often vary more than the well-defined species, and this often in the direction of one or the other of the supposed parents. It is now admitted that a large number of British willows formerly described as species are the result of the intercrossing of a comparatively small number of primary species, and it is not improbable that a similar condition of things obtains in *Rubus*, though the difficulty and intricacy of the subject delays its recognition.

The classification and nomenclature adopted are those of Mr. Rogers' Handbook of British Rubi (1900), and of his supplementary papers in the *Journal of Botany* (1909, pp. 310-318, 340-346). The numbers prefixed are those of the Handbook, and additions are indicated by an asterisk. "Hb. K." and "Arb. Hb." indicate that specimens are preserved in the General or the Arboretum Herbarium at Kew.

Subgenus IDAEOBATUS, *Focke*.

(1.) *Rubus Idaeus*, *L.* Nicholson records a few clumps in Queen's Cottage grounds, but these now seem to have disappeared: at all events we could not find any.

Subgenus EUBATUS, *Focke*.

(Groups 1 and 2, *Suberecti* and *Subrhamnifolii*, appear to be absent.)

Group 3. *Rhamnifolii*.

(14.) *R. carpinifolius*, *Weihe & Nees*. Several bushes found in Queen's Cottage grounds, and showing a certain amount of variation. Hb. K., Arb. Hb.

(22.) *R. dumnoniensis*, *Bab.* Nicholson records this as here and there in Queen's Cottage grounds. We have only succeeded in finding a single bush on the towing-path side of the ha-ha, which Mr. Rogers considers to be correctly named. We have not seen a specimen of Nicholson's plant. Hb. K.

(23.) *R. pulcherrimus*, *Neum.* Abundant in Queen's Cottage grounds. Probably the commonest of the Kew brambles, and one of the handsomest when in flower. Aptly named. Hb. K., Arb. Hb.

Group 4. *Villicaules*.

(27.) **R. gratus*, *Focke*, var. *sciaphilus*, *Lange*. Queen's Cottage grounds; not common. Of specimens collected in August, 1908, Mr. Rogers remarks: "Except for the stronger stem-prickles and

the nearly bald stem, these two sheets seem identical with Danish specimens of *R. sciaphilus*, Lange, now in my Herbarium. I have the same thing from 7 Western Counties (Welsh and English), but I have not seen it before from East England." Hb. K.

Group 5. Discolores.

(31.) **R. Godroni*, Lecoq. & Lamotte (*R. argentatus*, P. J. Muell.). Collected in Queen's Cottage grounds in August, 1908, and a few bushes seen again this year. Mr. Rogers has confirmed the identification. There is a specimen in the Arboretum Herbarium, collected in Queen's Cottage grounds in 1899 and left unnamed, which is certainly identical. Hb. K., Arb. Hb.

(32.) *R. rusticanus*, Merc. Nicholson records this as occurring here and there by towing-path, where only we have found it. The double-flowered variety (var. *flore pleno*) occurs near Queen's Cottage, but only as a cultivated plant.

Group 6. Sylvatici.

(37.) *R. macrophyllus*, Weihe & Nees. Nicholson records this as abundant in Queen's Cottage grounds, but we have not come across any bush which can be assigned to any form of that variable species, nor can we find a dried specimen of it. The plant may possibly be included here under another name.

Group 7. Vestiti.

(43.) **R. hypoleucus*, Lefv. & Muell. (*R. micans*, Gren. & Godr.). Found in several spots in Queen's Cottage grounds in August, 1908. Mr. Rogers remarks: "I think a highly glandular and aciculate form of this." Hb. K.

(47.) **R. leucostachys*, Schleich. Here and there in Queen's Cottage grounds. A piece collected in August, 1909, was sent to Mr. Rogers, who marked it: "Probably *R. leucostachys* × *rusticanus*, though in panicle nearer to *R. leucostachys* than is usual in this hybrid." But we find quite identical forms under *R. leucostachys*, and as *R. rusticanus* is absent from the Queen's Cottage grounds we incline to call it simply *R. leucostachys*. Hb. K.

Group 8. Egregii.

(53.) *R. mucronatus*, Blox. Nicholson records this as not uncommon along borders of plantations in Queen's Cottage grounds, where we have also gathered it. A piece collected in August, 1909, and forwarded to Mr. Rogers was returned marked: "I suppose certainly a *mucronatus* form (? *f. umbrosa*) with foliage less hairy than usual, and exceptionally long petiolule to terminal leaflet." Hb. K.

(55.) **R. anglosaxonicus*, Gelert. An unusually vigorous form was collected in the Queen's Cottage grounds in August, 1909, of which Mr. Rogers remarks: "The panicle is rather suggestive of a hybrid origin, but there seems little room for doubt that the stem pieces belong to *R. anglosaxonicus*." Hb. K.

Group 9. *Radulae*.

(61.) **R. radula*, *Weihe*. A few bushes in the Queen's Cottage and Kew Palace grounds. In both cases Mr. Rogers agreed as to the determination, though suggesting that the latter showed an approach to *R. anglosaxonicus raduloides*, Rogers, in one direction and to *R. mutabilis*, *Genev.*, in the other. Hb. K.

(62.) *R. echinatus*, *Lindl.* Fairly common and quite typical in Queen's Cottage grounds. One of our most distinct brambles and locally common. Hb. K.

(63.) *R. rudis*, *Weihe & Nees*. Common in open places in Queen's Cottage grounds, and found also on the strip by the side of the towing-path. Hb. K., Arb. Hb.

(66.) *R. podophyllus*, *P. J. Müll.* [or form between it and *R. oigocladius*, *P. J. Müll. & Lefv.*]. Queen's Cottage grounds. Nicholson records a form so named by Mr. Rogers, of which there is a specimen in the Arboretum Herbarium. We found an identical bush in August, 1908, and Mr. Rogers felt some doubt about the correct identification. Hb. K., Arb. Hb.

Group 10. *Sub-Koehleriani*.

(70.) **R. Lejeunei*, *Weihe & Nees*, var. *ericetorum*, *Lefv.* A specimen collected in the Queen's Cottage grounds in August, 1908, was returned by Mr. Rogers with the remark: "Looks to me nearer to *R. ericetorum*, *Lefv.*, than to *R. mucronatus*, *Blox.*, but it seems rather peculiar and not in a very good condition for determination." Hb. K.

Group 11. *Sub-Bellardiani*.

(80.) *R. foliosus*, *Weihe & Nees*. Nicholson records this as common in shade in Queen's Cottage grounds, and there is a specimen in the Arboretum Herbarium. We found only a few examples of it in 1908 and none in 1909. Hb. K., Arb. Hb.

Group 12. *Koehleriani*.

(81.) *R. rosaceus*, *Weihe & Nees*, var. *hystrix*, *Moyle Rogers*. Very common in shady places. Mr. Rogers writes: "I know this form well, having seen a great deal of it since I first met with it in the Witley neighbourhood in 1890. It has long seemed to me curiously intermediate between *R. rosaceus* and *R. pallidus*, *Weihe & Nees*, and I agree with Mr. Marshall in considering it to be the common sand form of *R. rosaceus* throughout S.W. Surrey. It is especially abundant in the Haslemere district and the contiguous parts of S.W. Sussex and N. Hants. I have also seen it at Woburn, Beds." A very common and characteristic form at Kew, frequently with very narrow leaves. Hb. K., Arb. Hb.

(Group 13, *Bellardiani*, appears to be absent.)

Group 14. *Caesii*.

(101.) *R. caesius*, *L.* Nicholson records this as found on the strip by the side of the towing path, where only we have found it.

HYBRIDS.

A few bushes were found which we were unable to name, and these are considered to be hybrids of two distinct combinations. They are as follows :—

**R. mucronatus* × *pulcherrimus* ? Borders of thickets in Queen's Cottage grounds. Not rare. Specimens of three different bushes were collected in August, 1909, and sent to Mr. Rogers, and all were determined as above. We had referred them doubtfully to *R. mucronatus*, which on the whole it most resembles, and with which it was probably included by Nicholson. (We do not find this or the next recorded, either by the Rev. E. F. Linton [*Journ. Bot.*, 1907, pp. 271, 272] or by Focke [*Asch. & Grabn. Syn. Mitt.-Eur. Fl.* vi. pp. 440-648] where many hybrid *Rubi* are mentioned.) Hb. K.

**R. echinatus* × *rosaceus* ? A fine clump of a *Rubus* was found in a thicket in Queen's Cottage grounds in August, 1908, and was collected as *R. fuscoater*, Weihe ? Mr. Rogers replied : "Looks like a hybrid. Not *R. fuscoater*, Weihe." This year we collected abundant material, and sent it with the record that it grew associated with *R. rudis*, *R. rosaceus*, *R. pulcherrimus*, and *R. echinatus*. Mr. Rogers replied : "In all respects looks like a hybrid. The strong development of prickles and the barrenness of all the panicles especially point to such an origin, but I cannot suggest any parents." After a comparison with its associates we think *R. echinatus* × *rosaceus* the most likely combination. The resemblance to *R. rosaceus* is very marked, and except in its longer spines it may be described as fairly intermediate between the two. Hb. K.

Ranunculus auricomus, *L.* A large patch on the side of the path at the back of the Tropical Aroid House. Coll., W. B. Turrill.

Pimpinella magna, *L.* In quantity near the Herbarium. Coll., W. B. Turrill.

Atriplex hastata, *L.* Several plants in broken ground near Kew Palace. Coll., W. B. Turrill.

FUNGI : THIRD SERIES.

G. MASSEE.

The first addition to the list of *Fungi* occurring in the Royal Botanic Gardens was published in the *Kew Bulletin*, 1906, pp. 46, 47, and the second additional list appeared in the *Bulletin*, 1907, pp. 235-244. Since the last list the following new and additional species have been recorded.

AGARICACEAE.

Lactarius, *Fries.*

L. scrobiculatus, *Scop.* On the ground. Q.

Marasmius, Fries.

M. Raffillii, Masee. *Pileus* primo campanulatus, dein applanato-expansus, margine subincurvus, laevissimus, crassiuscule membranaceus, glaberrimus, pallidissime sordideque flavo-griseus, medio ac super lamellas obscurior, 4–5 cm. diam. *Lamellae* pileo concolores, distantes, antice acutatae, postice attenuato-decurrentes, acie integrae. *Stipes* leviter excentricus, incurvus, tenuis, glaber-rimus, tenax, pileo concolor. *Sporae* ellipsoideae, hyalinae, $5 \times 3 \mu$.

On decaying staging in Stove, *C. P. Raffill*.

This species does not conform with European types of *Marasmius*, and is probably an introduced species.

Inocybe, Fries.

I. echinata, Roth. This fungus has long been known as occurring in hothouses, &c., in different European countries, and has always been considered as an alien. Quite recently it has appeared in quantity on the trunk of a fern just received from New Zealand, which may prove to be its native home.

THELEPHORACEAE.

Cyphella, Fries.

C. Berkeleyi, Mass. On dead sedge. A. (G. Nicholson.)

TREMELLINACEAE.

Exidia, Fries.

E. albida, Bref. On dead oak branch. A.

GYMNOASCACEAE.

Arachinotus, Cohn.

A. aureus, Cohn. On dead beech branch. A. (G. Nicholson.)

SPHAERIACEAE.

Cucurbitaria, Gray.

C. elongata, Grev. On *Robinia hispida*. A.

C. bicolor, Fckl. On *Prunus sinensis* and *P. japonicus*. A.

Lophiostoma, Ces. & De Not.

C. ulicis, Nke. On gorse. A.

Diaporthe, Nits.

D. vepris, Fckl. On bramble. Q.

Rosellinia, De Not.

R. pulveracea, Fckl. Dead wood of *Crataegus*. Q.

R. lignaria, Grev. On furze. A.

Melanomma, Fckl.

M. nudum, Sacc. & Speg. On dead branches of *Tamarix tetrandra*. A.

Didymosphaeria, Fckl.

D. epidermidis, Fckl. Dead wood. Q.

Gibbera, Fries.

G. vaccinii, Fries. On dead branches of *Genista aetnensis*. A.

Hypocrea, Fries.

H. gelatinosa, Fries. Dead wood. Q.

Pleospora, Rabenh.

P. gymnocladi, Baguis. On *Gymnocladus canadensis*. A.

Gibberella, Sacc.

G. Saubinetii, Sacc. On dead twigs of *Gleditschia sinensis*. A.

DISCOMYCETES.

Belonidium Mont. & Dur.

B. Jerdoni, Berk. On dead wood. A.

Dasyscypha, Fries.

D. leuconica, Mass. On dead stem of *Calluna*. A. (G. Nicholson.)

D. ascuna, Mass. On dead stem of *Calluna*. A. (G. Nicholson.)

D. ciliaris, Sacc. On barked wood of fallen beech. A.

Godronia, Karsten.

G. callunigena, Karsten. On dead stem of *Calluna*. A.

Echinella, Sacc.

E. setulosa, Mass. & Crossl. On dead stem of heather. A.

Cenangium, Fries.

C. abietis, Rehm. On dead wood of *Pinus montana*. A.

Orbilia, Fries.

O. succinea, Quelet. On a dead elder branch. A. (G. Nicholson.)

DEUTEROMYCETES.

Phoma, Fries.

P. amorphae, Sacc. On *Amorpha fruticosa*. A.

P. melaena, Mont. On *Lychnis dioica*. Q.

Diplodia, Fries.

D. rhois, Sacc. On branches of *Rhus glabra*. A.

D. cercidis, Ellis & Everh. On *Cercis canadensis*. A.

D. siliquastri, West. On *Cercis Siliquastrum*. A.

Diplodina, West.

D. malvae, Togu. On dead stem of *Sidalcea* sp. A.

Septoria, Fries.

S. tecomae, Ellis & Everh. On *Tecoma radicans*. A.

Pestalozzia, De Not.

P. funerea, Lib. On dead *Cryptomeria japonica*. A.

Chromosporium, Corda.

C. aureum, Sacc. On dead oak wood. A.

Chaetostroma, Corda.

C. atrum, Sacc. On rachis of *Cladrastis tinctoria*. A.

Septocylindrium, Bon.

S. Bonordeni, Sacc. On stem of *Vitis inconstans*. A.

Verticillium, Nees.

V. albidum, Sacc. On gorse. A.

V. quaternellum, Grove. On ripe blackberry. A.

Fusarium, Link.

F. album, Sacc. On old bast matting. A.

Bispora, Corda.

B. pusilla, Sacc. On old bast matting. A.

Periconia, Bon.

P. nigrella, Sacc. On dead beech branches. Q.

Hymenula, Fries.

H. Berkeleyi, Sacc. On fallen fir cones. Q.

LV.—DIAGNOSES AFRICANAE: XXXII.

1051. *Nemesia lilacina, N. E. Brown* [Scrophulariaceae-Hemimerideae]; affinis *N. parviflorae*, Benth., sed ramis numerosissimis, bracteis reflexis, floribus purpureo-lilacinis et capsulis oblongis valde diversa.

Herba annua, 20–37 cm. alta, profuse ramosa, corolla excepta ubique tenuiter et minute glanduloso-pubescens. *Rami* angulati, inferne subteretes, adscendentes vel subpatentes. *Folia* 2–3·5 cm. longa, 4–6 mm. lata, anguste lanceolata vel superiora lineari-lanceolata, acuta vel obtusa, dentata. *Racemi* 9–28 cm. longi, laxi. *Bractaeae* reflexae, 2–5 mm. longae, sessiles, cordato-ovatae, acutae. *Pedicelli* patentes, graciles, 9–13 mm. longi. *Sepala* 2–2·5 mm. longa, oblonga vel lineari-oblonga, subacuta. *Corolla* (palato labii inferioris excepto) glabra; labium superius 3·5 mm. longum, 5–7 mm. latum, 4-lobum, lilacinum, atropurpureo-striatum, lobis oblongis, obtusis; labium inferius infra palatum reflexum, 3–4 mm. longum, 5–6 mm. latum, rotundatum, integrum, pallide purpureo-lilacinum, palato subtuberculato luteo-maculato; calcar 3–3·5 mm. longum, dorsaliter compressum, obtusum, albidum. *Capsula* 5–7 mm. longa, 3·5–4 mm. lata, oblonga, apice emarginata.

GERMAN SOUTH-WEST AFRICA. Hereroland; near Okahandya, Dinter.

Described from a living plant sent to Kew in August, 1909, by Messrs. Haage & Schmidt, who raised it from seed sent to them by Mr. Dinter in October, 1906.