THE TYPE OF GENUS COCCUS (HOMOPTERA, COCCIDAE)

IN 1899 I discussed the genus *Coccus,* deciding that *C. phalaridis* L. was to be taken as the type. Mrs. Fernald, in her catalogue (1903) takes *C. hesperidum* L. as the type. In both cases the decision was correct, according to the rules invoked, but as matters are understood to-day, I think both were wrong. Article 30 of the International Rules states that if a genus, no type being designated, contains a species possessing the generic name as its specific or subspecific name, either as a valid name or synonym, that species becomes *ipso facto* the type of the genus. Now Dioscorides (and probably also, much earlier, Theophrastus) knew *Kermes,* and it was described as a kind of kokkos, that is to say, a seed or berry. Its insect nature was not suspected in those early days. Neither *C. phalaridis* nor *C. hesperidum* is at all berry-like, and it is certain that when Linnaeus used (in Latinized form) the ancient designation of *Kermes,* he had that insect in mind as typical of the genus. Therefore, it is proper to designate *Coccus ilicis* L. (*Coccus ilicis* Strobelberger, 1620) as the type of *Coccus.* The name *Kermes* is objectionable as being really a variant spelling of *Chermes,* which is applied to insects of a different family.

The Coccidae in the strict sense, consequently, are the round, berry-like insects found on oaks all round the world in the northern hemisphere.

This leaves us in some uncertainty as to the generic position of *C. hesperidum* L. Sherborn, who examined the original references, found *Calymmatus* Costa, 1840, and *Calypticus* Costa, prior to 1839, both containing *C. hesperidum.* I now designate *C. hesperidum* as the type of both, to avoid the uncomfortable possibility of having to take up *Calypticus* for *Pulvinaria,* a species of which was also included. On this basis *Calypticus* is the genus for *C. hesperidum,* also including such forms as *C. acuminatus* (Sign.), *C. mangiferae* (Green), *C. viridis* (Green), *C. pseudohesperidum* (Ckll.) and others placed as *Coccus* in the Fernald Catalogue. The family containing these insects will be Lecaniidae. Mrs. Fernald cites *Calymmata* Costa, 1828, which would have priority over all other names in this group; but she stated (1902) that she had not seen the publication, and it is not cited by Sherborn. There is no indication of any binomial under *Calymmata.* Lindinger and others cite *Calymnatus,* but I presume that *Calymmatus,* as given by Sherborn, is correct. Kirkaldy, quoted by Waterhouse, gives the date of *Calymnatus* as 1828. This seems to be a mistake; Kirkaldy, in his notes in the *Entomologist,* cites *Calymmata,* 1828, but mentions no type, though he is careful to cite one whenever it is available. On the same page he gives *C. hesperidum* as the type of *Lecanium,* Burmeister, referring to Westwood, "Mod. Class. Insects." There seems to be a chance that *Lecanium* is prior to *Calypticus,* but it has been restricted to another type, which I called *Enlecanium.* Sanders (1909) cites *L. persicae* (Fab.) as the type of *Lecanium.* I do not think Westwood can be said to have designated a type, but Kirkaldy (1906) is explicit. If there is no way to decide between *Lecanium* and *Calypticus* on grounds of priority, common sense will of course indicate the use of the familiar name *Lecanium.* Kirkaldy's type designation holds over that of Sanders.

Coccus (syn. *Kermes* Boitard) includes in North America such species as *C. boguei* (Ckll.), *C. cockerelli* (Ehrh.), *C. concinnulus* (Ckll.), *C. galliformis* (Riley), *C. gillettei* (Ckll.), *C. nivalis* (King & Ckll.), *C. pubescens* (Bogue), etc. *Kermes ceriferus* Ehrhorn can not be combined with *Coccus* on account of *C. ceriferus* Anders., 1791. It may be called *C. ehrhorni* n.n.

The European species include *C. ilicis* L., *C. gibbosus* (Sign.), *C. quercus* L., *C. roboris* (Fourc.), *C. vermilio* (Planch.), *C. pallidus* (Sign.), *C. cordiformis* (Lindinger), etc. From Japan we have *C. nakagawae* (Kuw.), *C. nawae* (Kuw.), *C. miyasakii* (Kuw.) and *C. vastus* (Kuw.). From the Himalayas (N. India) *C. himalayensis* (Green). *C. himalayensis,* of which I have some of the original material, is a small species, with rows of dark markings and scattered dots on a pale ground. It lives on *Quercus incana* Roxb. On Doi Sutep, in northern Siam, I obtained a very fine new species, *C. siamensis* sp. n. It is very much larger than *C. himalayensis,* 6 mm long, 7 broad and 5.4 high, with a shallow median longitudinal groove. The surface is highly polished, black, with creamy-white transverse markings, consisting of rows of spots. Anteriorly is a pair of cross-like markings, and spots at each side; then follows a row of confluent spots, almost to be described as a band, broken in the middle and at the sides, and with a pair of round spots just behind it dorsally; the next or median band is almost entirely broken into round spots, but some of these are confluent; posteriorly are two broken bands and irregular spots. The food plant is probably *Quercus semiserrata* Roxb. The arrangement of the light markings is transverse, instead of longitudinal as in *C. himalayensis,* but there is the appearance of a median longitudinal dark band. The under side is black.

The Japanese *C. nawae* is rather similar, being nearly as large, with transverse markings. The Japanese *C. vastus* is even larger.

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