



FIG. 36.

one from me. Mr. L. O. Howard, however, tells me he has a good series in the National Museum at Washington. It is by no means common at Massett, for I have only taken nine in seven years, and never more than three in one year. It has occurred always in the same spot—on the under side of a rotten spruce log on the ground. From positions I have taken it in I conclude that it feeds either on the rotten wood or on minute fungoid growths on the wood. On one occasion I obtained two specimens by pouring water into the log, which is now soft and fibrous with age, when they emerged from holes. The insect is slow and deliberate in its movements, and makes no attempt to fly when disturbed. It has occurred only in early spring; several of my specimens were taken in the middle of February when snow was on the ground.

#### ON THE GENERIC POSITION OF SOME BEES HITHERTO REFERRED TO PANURGUS AND CALLIOPSIS.

BY T. D. A COCKERELL, MESILLA, N. MEX.

Having lately received from Mr. Friese, of Innsbruck, a number of European bees, I have been led to re-examine certain of our species, in order to determine their relationship to a number of old-world genera not supposed to occur in America. The result is extremely interesting, and seems to show that we have for many years been placing bees in genera to which they by no means belong. The following table may be used provisionally to separate the genera under discussion\*:

A. Tongue more or less short and broad, tapering at the end. (Andreninæ).

1. Basal nervure nearly or quite straight.
  - a. Three submarginal cells..... *Andrena*, Fabr.
  - b. Two submarginal cells..... *Parandrena*, Rob.
2. Basal nervure strongly bent.
  - a. Three submarginal cells..... *Halictus*, Latr.
  - b. Two submarginal cells..... *Hemihalictus*, Ckll.

\*Mr. Friese sends me also four examples of *Nomioides pulchellus*, Schenck, taken at Pest on the second of June. This bee is a *Perdita* with the venation of an *Halictus*! It is curious to see all the ornaments, sculpture, etc., of *Perdita*, with a long tapering marginal cell and three submarginals. It is evident from this, and from the absence of *Perdita* in the American tropics, that our genus is of boreal origin, not austral, as I formerly thought.

- B. Tongue narrow and more or less elongated, usually quite long. (Panurginæ).
1. Marginal cell produced, tapering to a point, not appendiculate.
    - a. Body *Colletes*-shaped, abdomen with hair-bands. *Rhophites*, Spin.
    - b. Body *Halictus*-shaped, abdomen without well-formed hair-bands. . . . . *Halictoides*, Nyl.
  2. Marginal cell truncate at tip, usually appendiculate.
    - a. Body *Colletes*-shaped, abdomen usually with hair-bands. . . . . *Calliopsis*, Sm.
    - b. Body *Halictus*-shaped, abdomen without well-formed hair-bands. . . . . *Panurginus*, Nyl.

The genera under B have but two submarginal cells ; those under A all have a marginal tapering to a point. I give the subfamilies as I find them, but it seems at least probable that the form of the tongue is an adaptive character, not to be relied upon for separating groups higher than genera. The Panurginæ, notwithstanding the tongue, appear to be certainly Andrenidæ.

#### *Parandrena.*

The type is *P. andrenoides*, a spring-flying species. The smaller stigma of the autumnal "*Panurgus*" *pectidis*, *rhodocentrus* and *olivie* is paralleled in *Andrena* by that of *A. pulchella*, also an autumnal insect. For the present I would place the three species of "*Panurgus*" named in *Parandrena*, with the reservation that they may hereafter need to be separated from it. They are much nearer to *Rhophites* than to *Panurgus*.

#### *Hemihalictus.*

The type is *H. lustrans*, described as *Panurgus*. This looks not unlike the European *Halictoides*, but differs in the tongue, which in *Halictoides* is very narrow, and by the strongly bent basal nervure and the third discoidal cell considerably narrowed above.

#### *Rhophites.*

Mr. Friese sends me *R. quinquespinosus*, Spin., and *R. canus*, Ev. These are what we should call *Panurgus*, and if there are in our fauna any "*Panurgus*" with the pointed marginal cell, of fairly robust shape, with abdominal hair-bands, these will belong to *Rhophites*, provided they have the narrow elongated tongue which separates them from *Parandrena*. The stigma of *Rhophites* is small, as in the autumnal species provisionally referred above to *Parandrena*.

*Halictoides.*

Many authors have confused this with *Rophites*, but it is fairly distinct. I have before me the following species :

*H. paradoxus*, Moraw.—Innsbruck, July 15th ; Sept. 13th, at *Euphrasia*. Coll. Friese.

*H. dentiventris*, Nyl.—Andermatt, July 9th ; "Weissnfls," Aug. 3rd; Sept. 2nd, at *Campanula*, Coll. Friese.

*H. inermis*, Nyl.—"Weissnfls," July 13th, at *Campanula*. Coll. Friese.

*H. marginatus* (Cress., as *Panurgus*).—My New Mexico insect has stood as *halictulus*, Cr., but according to Robertson that is identical with *marginatus*. It flies in August and September.

*H. campanula*, n. sp.—♂. Length, 9 to 10 mm. Black, shiny ; pubescence sparse ; pale cinereous, mixed with black, on head and thorax ; black, with a little cinereous, on abdomen and legs. Hair on inner side of tarsi shining orange-fulvous. Head large, very broad, a little broader than thorax, subquadrate, facial quadrangle very much broader than long, anterior edge of clypeus with a hoary fringe, clypeus and front appearing rough from very close punctures, mandibles with a well-formed inner tooth, antennæ crenulate, flagellum feebly tinged with ferruginous beneath ; mesothorax shiny, with distinct, rather close punctures ; enclosure of metathorax coarsely rugose ; tegulæ piceous, with a hyaline band ; wings smoky, nervures and stigma piceous, first recurrent nervure joining second submarginal cell considerably nearer its base than the second recurrent to its apex ; second to fourth joints of hind tarsi broadened, triangular ; abdomen shining, the surface appearing silky, hardly punctured ; no hair- or colour-bands ; sides of segments towards apex with tufts of black hair ; apex conspicuously tufted with more or less shining sooty hair ; a large tuft of sooty or black hair also arises from the sixth ventral segment, and is very conspicuous when the insect is viewed from the side. Tongue narrow.

*Hab.*—Four from Olympia, Washington State, June 30 ; all at flowers of *Campanula scouleri*. (T. Kincaid, coll.)

How many more of our so-called *Panurgus* will be found to belong to *Halictoides* I do not know, but it is probable that an examination of the types will show that we have at least as many *Halictoides* (six) as are known from the other side of the world.

*Panurgus.*

Taschenberg ("Die Gattungen der Bienen") separates *Panurgus* from *Rhophites* by its *truncate, appendiculate, marginal cell*. Three European species, now before me, all exhibit this character, which is generic. It therefore follows that none of the so-called *Panurgus* of Cresson's 1887 Catalogue belong to that genus. So far as known, we have no typical *Panurgus* in North America; two *Panurgus*-like forms may be referred to a new group, thus:

*Pseudopanurgus*, n. g.

Type *Ps. æthiops* (Cr., as *Panurgus*). Includes also *Ps. fraterculus* (Ckll., as *Calliopsis*). Black, nearly naked, strongly punctured, wings fuliginous, marginal cell distinctly but obliquely truncate at tip, two sub-marginals, *first recurrent nervure joining second submarginal cell no great distance before its middle, second recurrent joining it just before its tip, basal process of labrum large, subquadrate*. In some respects this seems to resemble Provancher's *Chelynia* (which I have not seen), but it is surely not the same thing.

*Panurginus.*

Mr. Friese sends me *P. montanus*, Gir., collected at Airolo, Andermatt, and Innsbruck. It flies at the end of June and beginning of July; one specimen is marked as from *Ranunculus*. The clypeus is yellow in the ♂, dark in ♀. To this genus belong *Panurginus clypeatus* (Cr.), *bidentis* (Ckll.), *margaritensis* (Fox), *compositarum* (Rob.), *albitarsis* (Cr.), *ornatipes* (Cr.), *rudbeckiæ* (Rob.), etc., all now referred in our lists to *Calliopsis*. The European *P. montanus* has the venation of our *P. clypeatus*.

*Calliopsis.*

This name can be retained for such species as *C. andreniformis*, *coloradensis*, *obscurellus*, etc. There also remain some forms which **must** be left in *Calliopsis* until a better place is found for them, although they seem scarcely congeneric with *andreniformis*.

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DR. HARRISON G. DYAR has removed from New York to Washington, D. C., where he has accepted the position of Honorary Curator of Lepidoptera in the United States National Museum.

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MR. ARTHUR J. SNYDER, of Evanston, Ill., has recently been appointed Principal of the North Belvidere Schools. His address is now 521 East Madison street, Belvidere, Ill.