

ON A NEW SPECIES OF PHYTOPHAGOUS *EURYTOMA* (CHALCIDIDÆ) FROM NEW ZEALAND.

By P. CAMERON.

WHILE the vast majority of the very extensive family of the Chalcididæ are undoubtedly parasitic on other insects, it is now well known that at least three of the tribes—the Agaonidæ (Fig-insects), the Torymidæ, represented by the Idarninæ (which are connected in some way with the Fig-Chalcids, probably as Inquilines), the Toryminæ, *Syntomaspis* and *Megastigmus*, and the family Eurytomidæ, two of whose tribes, the Isosmini and the Eurytomini—contain plant-feeding species. Not only do those Chalcid groups contain plant-feeders, but a few of them are injurious to the plants on which they feed. So far as I know, all the plant-feeding Chalcids feed in the seeds, except the Isosmini, which form galls on the stems of grasses, and the American genus *Eurytomacharis*, which also makes galls in the stems of the food-plant. At least four of these phytophagous Chalcids must be ranked among injurious insects. The damage done by the American “Joint-worm” to wheat is too well known. *Syntomaspis druparum*, Boh., has proved injurious to apples by devouring the seeds, both in Europe and in the United States. *Megastigmus spermatrophus*, Wachtl (said to be really a native of the Western United States), has proved very destructive to the Douglas-fir in the North of Scotland. I once found the larvæ of *M. aculeatus*, Swederus, in Cheshire, in some quantity in the hips of a garden rose, there being no dipterous or other larvæ present. This species is now found in the United States, and it also has been reared from rose-seed received from China (cf. C. R. Crosby, Bull. Cornell Univ. Agric. Exper. Station, Bull. 265, p. 379).* In North America the Eurytomid, *Evoxy-soma vitis*, Saunders, badly infests the seeds of the vine. *Bruco-phagus funebris*, How., in North America is certainly an enemy of the clover and alfalfa by feeding on their seeds.

It would be interesting to know if all the species of *Megastigmus* are vegetable-feeders. *M. pictus*, Foer. (a British species), has been reared from the seeds of the rose, and long ago Mr. Parfitt (Zool. xv. 1857, p. 5543) reared *M. pinus*, Parf., from the seeds of the pine. *M. brevicaudis*, Ratz., has been bred from the seeds of the Rowan (*Sorbus* or *Pyrus aucaparia*). It can hardly be that all species of *Megastigmus* are plant-feeders, unless we are to suppose that they live as Inquilines, like *Synergus*, in the galls made by other insects. Thus Mayr (Verh. z.-b. Wien, xxv. 135) gives a list of nineteen species

* In this paper Mr. Crosby gives a good review of the seed-infesting flies with much new matter.

of Cynipidæ from which *M. dorsalis*, F., has been bred, and of six from which *M. stigmaticans*, F., has been reared.

The whole subject of these plant-feeding Chalcids is well worth the attention of entomologists, alike from an economic and biological point of view. In the following paper I give the description of a new species of phytophagous *Eurytoma* from New Zealand, the life-history of which has been worked out by Mr. F. W. Hilgendorf, of Lincoln College, Christchurch, New Zealand. The insects live in the seeds of the Black Wattle (*Acacia decurrens*), which, although now common and thoroughly naturalized in New Zealand, is in reality a native of New South Wales. Mr. Hilgendorf writes me:—"In the autumn of 1909 I found every seed of a certain tree occupied by a grub, and now in November (*i. e.* the spring of 1909-10) each grub has given rise to the Chalcid referred to. There were no other insects than these among those hatched out."

Eurytoma acaciæ, sp. n.

Black; the knees, tibiæ, and tarsi rufo-testaceous, the head, thorax, and legs thickly covered with white pubescence, the head and thorax strongly umbilicately punctate, the abdomen smooth and shining, the female antennæ stout, smooth, bare, and shining, as long as the head and thorax united, the third joint a little enlarged, longer than the fourth, a little roundly narrowed towards the base and apex the last slightly longer and narrower than the penultimate. Wings hyaline, the nervures and stigma black. Female and male. Length, 3 mm.

The centre of the face is shining, finely, weakly, sparsely punctured, the sides opaque, rugosely, slightly, obliquely striated, the striæ not very clearly defined or separated. Centre of front depressed, smooth, shining, the depression wider than long, the sides stoutly margined, and there is a stout keel down the centre. Apex of clypeus broadly rounded. Parapsidal furrows moderately distinct, shallow. Abdominal petiole short, distinct, not much longer than wide. Metanotum with the punctures running into reticulations, the top broadly rounded. The sides of the scutellum are reticulated, but not so strongly as the apex above is rugosely punctured; the apex above is more coarsely punctured than is the base. Alar nervures stout, the post-marginal vein thinner than the others, and extending clearly beyond the stigmal.

The male has the antennal joints clearly, rather widely separated above, the separations almost forming incisions; the joints of the flagellum are somewhat thickly covered with stiff black hairs, most of which are as long as the joints. The abdominal petiole is longer than it is in the female, being more than twice longer than wide, and a little longer than the hind coxæ.



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