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A SYNOPSIS OF BRITISH PROCTOTRYPIDÆ (OXYURA).

BY CLAUDE MORLEY, F.E.S., F.Z.S., ETC.

I. Subfamily PROCTOTRYPINÆ.

As is the case with nearly all the groups of our smaller insects, neglect has been the portion of the Oxyura for a great number of years; and it is a plaintive task to compare the general interest nowadays taken in entomology as a whole with that evinced by our grandfathers. Their numbers were certainly few, but ours, in the less-worked groups, are nugatory; nor can much more be said, in respect of this family of Hymenoptera, upon the Continent. Nothing but a well-sustained publication of the André's excellent 'Species des Hyménoptères d'Europe' has recently been issued of importance, but in this great work Kieffer has brought forward such a *foule* of new species, incorporated in a most comprehensive manner with those already published, that ignorance now lies at the door of wilfulness, and not necessity. In order that we should not be behind our neighbours in a knowledge of the Oxyura of Britain I have attempted, in the following concise tabulation and notes, to present a superficial notion of the 680 species already recorded from our islands, together with some initial idea of their distribution here.

The first of the eleven subfamilies into which the Oxyura are now divided is the typical one PROCTOTRYPINÆ, and this is distinguished from all the remainder by the following characters: Antennæ rising far from mouth. Scutellum neither discally bisulcate nor basally constricted. Abdomen not laterally margined by a carina. Wings no more than normally ciliate; front ones with a determinate stigma, but no discal triangle of nervures, its radial cell entire; hind ones not basally lobed or attenuate.

Until quite recently this subfamily consisted of the single genus *Proctotrypes*, which was beautifully monographed by Haliday in his 'Hymenoptera Britannica Oxyura,' fasc. i, published by Baillière in 1839. But nowadays it has been comminuted into several smaller groups upon characters not, perhaps, too trivial to regard as genera, though the facies are in every case the same, and it is of little moment whether we accord them this rank or simply that of divisions of a single genus. It is, as Vollenhoven says, "to be regretted that Haliday's most precious

paper on the *Oxyura* remained unknown to Thomson, whilst he wrote on this subject," but the circumstance seems to have given rise to little synonymy; the latter redescribed the abundant *P. calcar*, and possibly his *P. buccatus* is not distinct from Haliday's *P. elongatus*. Their specific distinction may be owed to Kieffer's habit of regarding everything as different till proved identical even to the last pilus (in the broadest sense of the word!). The affinities of this subfamily are not at all with the other *Oxyura*, but with the *Polymorphi* group of *Braconidæ*, wherein the *Euphorids* have equally peculiarly contracted radial cell and the *Liophronids* very similar abdomen, with reflexed terebra.

NOTA.—There has been a recent attempt to sink the name *Proctotrupes* (originally spelt "Proctotrupes," presumably because the Germans possess no *y*) to *Syrphus*. Science is the essence of common sense; consequently, to alter a name that has been in universal use by scientists from the earliest times, the particular name, moreover, by which an entire group of Hymenopterous insects is known, in favour of one utterly unknown, one that is so similar to *Syrphus* of Fabricius (which antedates it) that in speech they are identical, to say nothing of any doubt that may exist respecting the synonymy—such a proceeding is, I have no hesitation in definitely stating, so far from common sense as to border upon folly. Such a course shall never be accepted by me.

TABLE OF GENERA.

- (6). 1. Metathorax scabrous, or, at least, with a central carina.
- (5). 2. Mesothoracic notauli entirely wanting.
- (4). 3. All the tarsal joints and claws simple.

PROCTOTRUPES, Latr.

- (3). 4. Anterior claws trifold, fifth joint explanate.

EXALLONYX, Först.

- (2). 5. Mesothoracic notauli deeply impressed DISOGMUS, Först.

- (1). 6. Metathorax smooth, with no central carina.

PARACODRUS, Kieff.

But for practical use, in a rough and ready way, I have found the following conspectus sufficiently comprehensive:

Metathorax rugose or scarbriculous throughout.

Notauli deeply impressed 1. *Disogmus*.

Notauli wanting.

Propleuræ striate; abdomen red 3. "*Syrphus*," Kieff.

Propleuræ smooth; abdomen black.

Claws dentate; onychii explanate 4. *Exallonyx*.

Claws simple; onychii slender 3. "*Phænoserphus*," Kf.

Metanotum at least partly smooth, nitidulous

Metathorax with smooth discal areæ 2. "*Cryptoserphus*," Kf.

Metathorax entirely smooth throughout 5. *Paracodrus*.

DISOGMUS, Förster.

Hym. Stud., ii, 1856, p. 99.

Eleven European and three American species are known. We have but two :

- (2). 1. Pronotum laterally tuberculate ; metanotum tricarinate.
1. *areolator*, Hal.
(1). 2. Pronotum not tuberculate ; metanotum unicarinate.
2. *nigricornis*, Kief.

1. DISOGMUS AREOLATOR, Hal.

Proctotrupes areolator, Hal., Hym. Brit., i, 1839, p. 13, ♂ ♀. Curt., Brit. Entom., xvi, 1839, pl. dcxlv, ♀. *Disogmus areolator*, Först., lib. cit., p. 100, ♂; Ashmead, Bull. U.S. Nat. Mus., 1893, p. 332, pl. xiii, fig. 6; André, Spp. Hym. Eur., x, 1907, pl. xi, fig. 6, p. 283, ♂ ♀.

This species is at present confined to Britain and is among our rarer kinds. Taken in sylvan places in Ireland during the autumn by Haliday and in England by Walker. It has occurred to me singly on bracken at Wilverley Inclosure in the New Forest, and by sweeping long grass at Wortham in Suffolk, both in the middle of June. That it is actually much less rare than would seem is proved by its existence in my Monks Soham garden, where I have never through fifteen years found it wild. On April 10th, 1907, a piece of ordinary old willow-stump was brought in from this garden, bored by insects; in the early morning of May 10th a female of the present species had emerged therefrom; two more were out on 13th inst., and made no attempt to come up to the light; on 20th a fourth emerged; on 18th a single *Proctotrypes fuscipes* was bred; but the only other emergants were one female sawfly, *Pteronus riminalis*, on 21st at 11 a.m., four very small—too small, I think, to have been hosts of this parasite—dipterous *Sciara* sp. on 13th and 20th, and a couple of the heteromerous beetle, *Pyrochroa serraticornis*, on 13th and 20th. On May 20th, 1910, Mr. Ernest A. Elliott took the species in some quantities in his garden at Belsize Grove, in Hampstead, running over a half-decayed black poplar billet, recently felled; it was noticed upon this and a similar billet from the same tree for four years in succession, until the wood rotted and fell to pieces, in annually increasing numbers, but no probable host was detected (such as the above *P. serraticornis*). I have seen one pair from Nottingham in May, on 6th at Radcliffe-on-Trent and on 15th at Glapton, near Clifton.

2. DISOGMUS NIGRICORNIS, Kieff.

André, lib. cit., p. 285. ♂.

Unknown to me, and doubtfully British: "France et probablement Ecosse"—Kieffer, l.c.

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(10). 1. Abdominal petiole not visible from above; metanotum smooth with more or less distinct areæ; terebra filiform [CRYPTOSERPUS, Kieff.]
(9). 2. Radial cell as long, or nearly so, as stigma.
(6). 3. Metanotum basally trifoveate; hind calcar short, always straight.
(5). 4. Pronotal tubercles small; metanotum without areæ.
1. *brevimanus*, Kieff.
(4). 5. Pronotal tubercles acute; metanotal areæ entire.
2. *laricis*, Hal.
(3). 6. Metanotum not foveate; larger hind calcar long, often arcuate.
(8). 7. Radial nervure straight; notauli slightly indicated.
3. *longitarsis*, Th.
(7). 8. Radial nervure curved; notauli utterly wanting.
4. *aculeator*, Hal.
(2). 9. Radial cell much shorter than stigma; body squat.
5. *parvulus*, Nees.
(1). 10. Abdominal petiole distinct, visible above; metanotum entirely sculptured.
(16). 11. Propleuræ usually striate; abdomen or second segment entirely red; terebra filiform, at least half abdominal length [SERPHUS, Kieff.].

- (13). 12. Metathorax reticulate ; terebra apically deflexed.
6. *gravidator*, Linn.
- (12). 13. Metathorax longitudinally striate ; terebra evenly arcuate.
- (15). 14. Wings aborted ; large hind calcar straight.
7. *devagator*, Oliv.
- (14). 15. Wings fully developed ; large hind calcar arcuate.
8. *gladiator*, Hal.
- (11). 16. Propleuræ smooth, basally punctate ; second segment black or piceous. rarely apically rufescent ; terebra gradually attenuate throughout, shorter than half abdomen [PHÆNOSERPUS, Kieff.].
- (20). 17. Metathorax centrally sulcate throughout its length.
- (19). 18. Head transverse, as broad as thorax ; cheeks dentate. -
9. *buccatus*, Thoms.
- (18). 19. Head globose, shorter than thorax ; radial cell acute.
10. *elongatus*, Hal.
- (17). 20. Metathorax centrally carinate throughout its length.
- (26). 21. Frons apically convex ; radial cell fully length of stigma.
- (25). 22. Metanotum evenly rugose ; discal nervures indicated.
- (24). 23. Wings normally developed ; abdomen entirely black.
11. *calcar*, Hal.
- (23). 24. Wings aborted ; central segments often brunneous.
12. *curtipennis*, Hal.
- (22). 25. Metanotum rugose, basally smooth ; discal vein wanting.
13. *seticornis*, Th.
- (21). 26. Frons produced ; radial cell much shorter than stigma.
- (28). 27. Metathorax tuberculate ; head globose ; legs infuscated.
14. *fuscipes*, Hal.
- (27). 28. Metathorax mutic ; head distinctly transverse ; legs rufescent.
- (32). 29. Frons tuberculiformly prominent between antennæ.
- (31). 30. Head transverse ; flagellar joints long, not cylindrical.
15. *pallidipes*, Jur.
- (30). 31. Head and flagellar joints quadrate, latter cylindrical.
16. *hyalinipennis*, Morl.
- (29). 32. Frons deplanate and not prominent between antennæ.
- (34). 33. Stigma twice length of radial cell ; discal nervures wanting.
17. *micrurus*, Kieff.
- (33). 34. Stigma thrice length of radial cell ; discal nervures indicated.
- (36). 35. Legs of normal length ; metanotum evenly rugulose.
18. *viator*, Hal.
- (35). 36. Legs elongate ; metanotum triangularly smooth basally.
19. *Chittii*, Morl.

(To be continued.)

- Platycnemis pennipes*, Pallas.—Gyök-su, 4 ♂ ♂, 1 ♀, 13 . viii . 20 ; Sweet Waters of Europe, ♀ (*lactea*), 14 . v . 20 .
Cercion lindeni, Selys.—Kuchük Chekmejë L., ♂, 29 . vii . 20 .
Pyrrhosoma nymphula, Sulz.—Kartal, ♀, 18 . iv . 20 .

ÆSCHNIDÆ—GOMPHINÆ.

- Onychogomphus forcipatus*, Linné.—Kiat-hané (European side), 2 ♀ ♀, 10–16 . viii . 19 ; Yalova, ♂, end viii . 19 .

ÆSCHNINÆ.

- Æschna mixta*, Latr.—Pera, ♀, 15 . viii . 19 ; Kuchük Chekmejë, ♀, 23 . vii . 20 .

LIBELLULIDÆ—CORDULINÆ.

- Somatochlora flavomaculata*, Vanderl.—Kadikeui (Asiatic side), ♀, 8 . vi . 20 ; Halki Island, Prince's Islands, 2 ♀ ♀, 10 . vi . 20 (“pine woods, common”).
S. metallica, Vanderl.—Belgrade Forest, ♂, 24 . vi . 19 .

LIBELLULINÆ.

- Orthetrum anceps*, Schneider.—Belgrade Forest, ♂, 20 . vii . 19 .
O. cancellatum, Linné.—Kuchük Chekmejë L., ♀, 29 . vii . 20 .
Sympetrum meridionale, Selys.—Kuchük Chekmejë, ♂, 31 . viii . 19 ; Yalova, ♀ end viii . 19 .
S. fonscolombi, Selys.—Kuchük Chekmejë L., ♂, 29 . vii . 20 .

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(Continued from p. 60.)

1. PROCTOTRYPES BREVIMANUS, Kieff.

Serphus brevimanus, André, *l.c.*, p. 323, ♂ ♀.

Hitherto this species was only known in a single pair, captured at Govilon on the Usk, near Abergavenny, and at Niton, in the Isle of Wight, by the late Rev. T. A. Marshall. The female occurred to me at Killarney, in South-west Ireland, in June, 1913; and it occurred on the windows of Monks Soham House on September 1st, 1916, and July 10th, 1918. Sich has found it during October, 1907, on the stem of a mushroom at Kew, in Surrey.

2. PROCTOTRYPES LARICIS, Hal.

Proctotrupes laricis, Hal., *l.c.*, p. 14, ♂ ♀. *Serphus laricis*, André, *l.c.*, p. 322, ♂ ♀.

France. Not very common in English woods (Walker); once taken abundantly during September in Ireland (Haliday); two at Burgess Hill in Sussex on May 3rd, 1911 (Lyle); Scotland in September, (Cameron). Very rare in my experience. I have swept it from long grass near Coniferæ, at Bourne Bridge, in Ipswich, during May, and near Killarney, in Ireland, during early June. It once occurred among half a dozen *P. fuscipes* during May on lime leaves in my Monks Soham garden.

3. PROCTOTRYPES LONGITARSIS, Thoms.

Proctotrupes longitarsis, Thoms., Öfv. Sv. Ak. Forh., xiv, 1857, p. 415; Vollenhoven, Pinacographia, iv, p. 30, pl. xviii, fig. 8, ♀. *Serphus longitarsis*, André, l.c., p. 340, ♂ ♀.

Algeria, south coast of France, Lapland. Not hitherto recorded from Britain. I possess a female, correctly named by both Marshall and Chitty, which was captured by Alfred Beaumont on October 13th, 1894, at Boxhill, in Surrey. Chitty himself took one at Dodington, in Kent, on October 2nd, 1903, and I have found it singly at Tuddenham Fen in early June, and on Southwold beach during late and mid-September, in Suffolk.

4. PROCTOTRYPES ACULEATOR, Hal.

Proctotrupes aculeator, Hal., l.c., p. 14, ♂ ♀; Blanch. Cuvier, Regne Anim., 1849, pl. cxv, fig. 4; Voll., l.c., iv, 1876, p. 30, pl. xix, fig. 3, ♀. *Serphus aculeator*, André, l.c., p. 219, ♂ ♀.

France and Finmark. "A parasite of *Mycetophila nigra*," Mg. (Voll., who figures the female with entirely rosy and deeply notaulate mesothorax!). Not infrequent in woods (Haliday and Walker); Niton, in Isle of Wight (Marshall). Not very common with us. It doubtless hibernates, for my dates range from November 4th, 1897, when I swept it in a marsh at Bramford, in Suffolk, through mid-April, when it was beaten from *Pinus sylvestris* at Bentley, near Ipswich, to May 3rd and 4th, 1907, when Chitty and I found several on spruce fir at Elveden; Southwold, on salt-marsh rushes in mid-September, on the Suffolk coast; Felden, in Herts (Albert Piffard); Attenborough, Gedling, Mapperley Plains and Teversall, in Notts, during May (Notts Museum); Coventry on July 10th, 1920 (Saunt); several at Bubwith, near Selby, in Yorks (Dr. Fordham); Ballater on August 8th, 1910, in Scotland (Elliott).

(To be continued.)

cides nigra, Linn., *Agraylea multipunctata*, Curt., and *Micropterna sequax*, McLach. But as the common *S. permistus* is not recorded at all, it suggests that this species is meant. I have reckoned Dale's *Hydroptila tineoides* as *sparsa*, not *femoralis*, Eaton. *L. vittatus*, *S. pallipes* and *M. nigra* seem curious omissions from my list. *Neuronia ruficrus*, Scop., is recorded from Holnest, and *Apatania muliebris*, McLach., from Blandford, bringing the Dorset total to 83. I have a list of 39, most of which, judging from their habits and distribution elsewhere, would probably be found were the county thoroughly worked throughout. This would give Dorset 121 species. The remaining 53 species are probably too northern or alpine in habit, or require haunts of a kind not developed in Dorset, such as wide-spread fen country and broads on the one hand or mountain torrents on the other.

Brookside,
Winfrith,
Dorset.

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(Continued from p. 83.)

5. PROCTOTYPES PARVULUS, Nees.

Codrus parvulus, Nees, Hym. Mon., ii, 1834, p. 360, ♂ ♀. *Proctotrypes parvulus*, Hal., l.c., p. 14, ♂ ♀. *Serphus parvulus*, André, l.c., p. 315.

A little-known species. Germany "in Fungis, præsertim in Boletis circinante, *Mycetophyllarum* larvis infestato, gregarius; Septembre et Octobre mensibus in memoribus" (Nees); and Finmark in July. Not common in woods during autumn (Haliday); females gregarious in Boleti (Walker). I have bred this species in some numbers from *Boletus*-fungi on old elm-trees about Ipswich; but, as I have already remarked ('Trans. Entom. Soc.', 1907, p. 39), it is impossible to determine if these were parasitic upon the dipterous genus *Cecidomyia*, the beetles *Orchesia micans* and *Phalacrus corruscus*, which were also bred therefrom, or upon *Meteorus obfuscatus* and *Thersilochus orchesiæ*, Morl., which were themselves parasitic upon the above *Orchesiæ*; judging solely by the comparative bulk of these various insects, it is probable that the *Proctotrypes* was a direct parasite upon this Heteromeron. Felden, in Herts, doubtless bred (Piffard); bred from *Orchesia micans* at Luccombe Chine, in Isle of Wight, on May 7th, 1914 (J. C. Pool); several bred from *Diphyllus lunatus* in *Sphacria concentrica* at Oxford (Lyle), who has proved

the order of its host by breeding both sexes and a nymph during October, 1915, from *Coleopterous* larvæ, to which the parasite is in this case still actually attached. On a single sunflower during mid-September at dusk in Ipswich.

6. PROCTOTYPES GRAVIDATOR, Linn.

Ichneumon gravidator, Linn., Syst. Nat., i, 1758, p. 565; Oliv. Encycl. Méth., vii, 1792 (*nec.* Thunb.). *Banchus gravidator*, Fab. Syst. Piez., 1804, p. 128. *Codrus gravidator*, Jurine, Nouv. Méth., 1807, p. 309, ♀; Nees, *l.c.*, p. 354; Zett., Ins. Lapp., i, 1838, p. 416. *Proctotrupes gravidator*, Lep. Encycl. Méth., x, 1825, p. 208; Hal., *l.c.*, p. 14, ♂ ♀; Thoms., *l.c.*, xiv, p. 412; Voll., *l.c.*, p. 29, pl. xviii, fig. 3, ♀.

The colour of this species is variable, and Haliday instances examples with femora and antennæ nigrescent, and others with black abdomen and infusate legs, having only base of both tarsi and tibiæ dark ferrugineous; my darkest male, taken at Market Rasen, in Lincs, during June, 1912, has nothing but base of second segment and part of tibiæ dull rufescent. That this species has the power of, at least occasionally, stinging, is proved by W. Rollason, who wrote to me that his little daughter was quite sharply stung by one in his garden at Truro on October 16th, 1909; it "caused a raised white bump, which remained for about four hours."

In sunny fields, frequent everywhere in summer; Sweden, Italy (Haliday); all Europe to Sicily (Kieffer); bred from galls of *Cynips Kollari* by Fitch ('Entom.,' xiii, p. 260), and according to Vollenhoven, from the common British fungus-gnat, *Boletophila fusca*, etc. I have found it a not uncommon species in dry places, such as the coast sand-hills and the "Breck" of N.W. Suffolk; never taken on flowers, but sometimes hiding beneath *Erodium cicutarium* and swept from gorse; rarely sheltering in rabbit-holes. Evenly distributed through the third quarter of the year from June 10th to September 27th, at Foxhall, in 1896, Ipswich, Herringswell, Belstead, Kessingland, Wangford, and common about Brandon at the end of June, especially so in 1918, though a female was once swept from nettles at Belstead so late as October 29th. Copthorne Common, Surrey (Wilson Saunders, 1871); Felden, in Herts (Piffard); Faversham, in Kent (Chitty); Lichfield, in Stafford, 1917 (Lance Carr); Selby, in Yorks (W. J. Fordham); apparently very rare in Notts, whence Prof. J. W. Carr has sent me but one female, taken at Bulwell Hall on August 17th, 1917.

7. PROCTOTYPES DEVAGATOR, Oliv.

Ichneumon devagator, Oliv., Encycl. Méth., vii, 1792, p. 192. *I. campanulator*, Fab., Ent. Syst. Suppl., 1798, p. 227; Piez., p. 99. *Proctotrupes campanulator*, Klug., Mag. Ges. Nat., i, p. 73; Voll.,

l.c., p. 29, pl. xviii, fig. 4, ♀. *Eriodorus bimaculatus*, Walck., Faun. Paris, ii, 1802, p. 47. *Codrus campanulator*, Nees, *l.c.*, p. 353, excl. ♂. *Serphus divagator* (*sic*), André, *l.c.*, p. 292. ♀.

Modern authors have seen fit to regard this female as distinct from *P. gladiator*; personally I am convinced that it is no more than a brachypterous form thereof, for the entire structure is identical throughout. Chitty fully concurred in this opinion.

Italy, Hungary, Germany and France (Kieffer); it has recently been bred in some numbers in southern Europe from galls of the Dipteron, *Lonchæa lasiophthalma*, on *Dactylon*; Vollenhoven, however, records it from the fungus-gnat, *Sciophila lim.*, none of which are British; it is said to occur in September, sometimes under stones on the ground. Unknown to Haliday, and Westwood's 1840 figure obviously refers to *P. gladiator*; apparently hitherto not found in Britain, and erroneously recorded hence. I am glad to be able to definitely reinstate this name in our fauna by the capture of a typical specimen running on the bare sand during the afternoon of July 26th, 1904, on Foxhall Plateau, near Ipswich, in Suffolk.

8. PROCTOTRYPES GLADIATOR, Hal.

Proctotrupes gladiator, Hal., *l.c.*, p. 10, ♀. Vollenh., *l.c.*, p. 30, fig. 7, ♀. *P. bicolor*, Hal. *l.c.*, ♂. *P. brevipennis*, Westwood, *Introd.*, ii, 1840, p. 169, fig. lxxviii, ♀. *Serphus gladiator*, André, *l.c.*, p. 294, ♂ ♀.

Very rare in northern Ireland. Haliday took a female running among grass roots on a sunny sandy cliff; near Dublin (R. Ball); southern France (Walker); Sweden, Switzerland, Russia, Hungary (Kieffer). In my experience it is less frequent than *P. gravidator*, but not rare by sweeping short herbage in the most arid and sandy places, though not confined thereto; sometimes on flowers of *Compositæ*, and by beating bushes in woods. It has occurred to me only during September at Ipswich, in 1897; Depden, Frostenden, Covehithe Broad on *Tanacetum vulgare* and *Senecio Jacobæa*, and Baylham, except once, when a male was swept as early as June 22nd at Brandon. These Suffolk dates are connected by two other males found at Devonport during July (*P. de la Garde*) and Southampton on July 25th (*H. S. Gorham*); it has also occurred at Felden, in Herts (*Piffard*), and during 1900 at Westleton, in Suffolk (*Elliott*).

The second interesting specimen in the Farn Series is an example very close to the very rare (in Britain at any rate) type form. Scopoli describes this—"Superior wings greenish grey with fuscous longitudinal lines." The Farn specimen was clear grey with a slight brown tinge, superiors with blackish longitudinal lines, a black discal spot, and *slight* indications of dark transverse waved lines. There is no trace in this specimen of the reddish-brown ground-colour of the superiors of *ab. ramosana*, Hüb., and it certainly is nearer to the type than any example I have seen. It is labelled "New Forest, A.B.F."

The third noticeable specimen is an example of *ab. degenerana*, Hüb. At the date I wrote my paper I had only seen one example of this the most beautiful of all the *revayana* forms, purporting to be of British origin, which was said to have been taken by a professional collector, E. Morris, in the New Forest. Since then I discovered there was an example in the Webb Collection, acquired by him from the Briggs Collection in 1896, and originally in the Howard Vaughan Collection. This example is the one alluded to by Barrett in 'Lep. Brit. Isles,' vol. vi, p. 235, and is described in the last few lines at the bottom of the page. I am not aware that the place of origin of this specimen is known. At the Webb sale the name of the purchaser was not disclosed, and therefore I do not know its present location.

The Farn *ab. degenerana* is labelled "Chattenden," without any indication of the name of the captor, or of the source from which Farn obtained it. The example is set in the English fashion, with wing slope rounded; it was mounted on a gilt pin of the usual British make, and apparently was set between the dates 1850 and 1890. It is of the average size of *S. revayana*, expanding about 24 mm.; whereas Continental examples of this form are usually considerably larger than other forms. There does not seem any reason to suppose that this is anything but a genuine British example. The Farn series of *S. revayana* was badly affected by verdigris, and I have for this reason removed the old pins, and substituted for them verdigris-proof pins.

April 12th, 1922.

A SYNOPSIS OF BRITISH PROCTOTRYPIDÆ (OXYURA).

BY CLAUDE MORLEY, F.E.S., F.Z.S., ETC.

(Continued from p. 110.)

9. PROCTOTRYPES BUCCATUS, Thoms.

Proctotrupes buccatus, Thoms., l.c., p. 421, ♀. *Serphus buccatus*, André, l.c., p. 302, ♀.

Though only recorded from Sweden, this is not an uncommon species with us, and seems confined to the autumn. It ranges from August 9th, when I took it in the West Leake Woods, near Nottingham, in 1914, to October 8th, when it occurred under some sacking lying on the ground in Dodnash Wood, in Suffolk; it has occurred by sweeping at Blythburgh Wood, and I have noticed it on the Lowestoft cliffs flying slowly and hovering over the sand, about half-way up their face, on an oppressively hot morning with slight westerly breeze. Foxhall (Tomlin): Tostock, near Bury St. Edmunds (Tuck); Felden, in Herts (Piffard).

10. PROCTOTRYPES ELONGATUS, Hal.

Proctotrupes elongatus, Hal., *l.c.*, p. 11, ♀. *Serphus elongatus*, André, *l.c.*, p. 302, ♀.

Somewhat rare in northern Ireland, "in litoribus" (Haliday), which Kieffer considers to mean "rivage de la mer." It has not been anywhere discovered since first described in 1839, and is said to be similar in its abdominal and terebral structure to *Paracodruss apterogynus*; nor is the male yet known.

11. PROCTOTRYPES CALCAR, Hal.

Proctotrupes calcar, Hal., *l.c.*, p. 12, ♂ ♀; Voll., *l.c.*, p. 28, pl. xix, fig. 10, ♀. *P. calcaratus*, Thoms., *l.c.*, p. 419, ♂. *Serphus calcar*, André, *l.c.*, p. 306, ♂ ♀.

The large radial cell, combined with elongate pale legs and evenly sculptured metathorax, render this a very distinct species.

A common insect in woods from spring to autumn, extending throughout Europe; from Sweden to Spain and Algeria. Haliday considered it very common in woods and among grass on coast sandhills, and recorded it from England. For its most interesting parasitism upon the centipede, *Lithobius forficatus*, cf. Edward Newman's paper in 'The Entomologist,' iii, 1867, p. 342, "A Proctotrupes Parasitic on a Myriapod"; I know of no subsequent breeding. One of our commonest species, at least in the east of England, and ranging from early May to September 8th, most abundant in June. About half my localities are on the coast, but it also frequently occurs inland in marshes, and sometimes on lime-tree honey-dew, at Barton Mills, Mildenhall, Monks Soham, and Walberswick in Suffolk; Bury St. Edmunds (Tuck); Mablethorp, in Lincs, and Newstead, in Notts (Morley); Clacton-on-Sea (Newbury); Felden, in Herts, several (Piffard); Reigate, in Surrey (W. Saunders); Lyme Regis, in Dorset (Chitty); New Forest (Lyle); Olveston, in Gloucester (Charbonnier); Arnold, Edwinstow, in Sherwood Forest and Aspley Woods in June, Thorney in August; and Epperstone Park during September, in Notts (Carr); Killarney, in S.W. Ireland.

12. PROCTOTRYPES CURTIPENNIS, Hal.

Proctotrupes curtipennis, Hal., l.c., p. 12. *Serphus curtipennis*, André, l.c., p. 300, ♀.

Instantly known by its brachypterous condition; but the structure, and especially that of the metathorax and terebra leaves little doubt that it is a mere form of *P. calcar*. Two specimens alone are recorded, both from England, but unlocalised; one was taken by John Curtis long before 1839, as mentioned in his Guide of that year (Haliday), and the other is in Marshall's collection, which is in the Vienna Museum. It has not been found in Ireland, *pace* Kieffer. I am the fortunate possessor of a third specimen, kindly given me by Rev. H. S. Gorham, who captured it during 1907 at Malvern, in Worcester; and Dr. W. J. Fordham found another in 1917 at Bubwith, near Selby, in Yorks.

13. PROCTOTRYPES SETICORNIS, Thoms.

Proctotrupes seticornis, Thoms., l.c., p. 419, ♂ ♀. *Serphus seticornis*, André, l.c., p. 304.

Hitherto known only from Sweden. A single female was swept by me so long ago as October 7th, 1899, in a very swampy alder wood in the Bramford marshes, near Ipswich; and another on June 14th, 1907, from bracken in the particularly dry Wilverley Inclosure of the New Forest. But actually I expect it to be one of our commonest, though overlooked, species, for fully a dozen were sitting quiescently below lime-leaves on June 20th, 1919, in my Monks Soham garden after a thunderstorm.

14. PROCTOTRYPES FUSCIPES, Hal., ♂ ♀.

Proctotrupes fuscipes, Hal., l.c., p. 13, ♀. *Serphus fuscipes*, André, l.c., p. 307, ♀.

Taken near Edinburgh during September; also very rarely in northern Ireland (Haliday). Not rediscovered since first described, and the male is hitherto unknown, though it differs only sexually from the female, and the species is really one of our commonest. It is on the wing from May 18th, when it emerged with the above *Disogmus areolator*, to September; usually swept from reeds and rushes in marshy places, but it also occurs in some numbers on honey-dew on lime leaves in my garden here, especially during thundery weather late in the day. Felden in Herts (Piffard); Sherwood Forest in June (Carr); in a wicker beehive at Bury St. Edmunds (Tuck); Rookley Wilderness in Isle of Wight (Morey); and Banchory in the Kincardine highlands of Scotland (Elliott). My numerous examples are from Brandon Staunch, Monks Soham, Henham Park, Barton Mills, Ousden on banks of the River Kennet, Easton Broad, Southwold, Reydon, Westleton, in Suffolk, Louth in Lincs, and Chippenham Fen in Cambs.

15. PROCTOTRYPES PALLIPES, Jurine.

Codrus pallipes, Jur., Nouv. Méth., 1907, p. 309, pl. xiii, gen. 46, ♂; Nees, *l.c.*, p. 356, excl. syn. et var. *Proctotrupes pallipes*, Latr., Gen. Crust. et Ins., p. 38; Hal., *l.c.*, p. 11, ♂ ♀; Thoms., *l.c.*, p. 418, ♀; Voll., *l.c.*, p. 29, pl. xix, fig. 1. *Serphus pallipes*, André, *l.c.*, p. 309.

This species should certainly be ascribed to Jurine, and not to Haliday as is done in André; for nothing in the former's account is inaccurate but the antennal coloration, which is depicted as flavidous throughout. Haliday's two varietal forms appear quite different to me. The centrally produced propleuræ are distinctive of the present species.

Wide-spread from Hungary to Sweden; Vollenhoven records it (*l.c.*), as preying on the fungus-gnat, *Macrocera maculata*, Mg. Frequent everywhere in woody places in Britain (Haliday and Walker). I have found it very far from common, and pretty well confined to the month of June; it has always turned up at random in the sweep-net, or flying in sunshine, and several times in shady places in woods at Foxhall, Wherstead, Ipswich, Barton Mills and Tuddenham in Suffolk; Market Rasen in Lincs; Helpstone Heath near Peterborough, and Matley Bog in New Forest. There seems to be an entirely different mode of life to the above Mycetophilid suggestion, for Kawall says ('Stett. Entom. Zeit.', 1855, p. 260): "Many years ago, I found under a stone a shrunken beetle larva, which undoubtedly belonged to the *Staphylinæ*, dead. In it were several parasites in naked pupal state; these proved to be *Codrus pallipes*, Jur."; and there is no reason to suppose that he mistook *P. viator* for the present species, as I myself did ('Trans. Entom. Soc.', 1911, p. 453), in ascribing Mr. Step's breeding to it.

(To be continued.)

NOTES AND OBSERVATIONS.

THE DIPTEROUS FAMILY BLEPHARICERIDÆ.—Macquart (1843) wrote *Blepharicera*, but this was amended to *Blepharocera*, and the family has been called Blepharoceridæ. It seems evident that the original spelling must be restored, and the family name changed to Blephariceridæ. Were we to permit such changes in the spelling of generic names, it would be impossible to save the name of the Blepharicerid genus *Philorus*, Kellogg, long antedated by the Lepidopterous *Philoros*, Walker.* I will take occasion to record that by St. Vrain Creek, above Peaceful Valley, Colorado, August 23rd, I found the blepharicerid *Bibiocephala elegantula*, V. Röder, preying upon the subimago of a mayfly (Ephemeridae).—T. D. A. COCKERELL.

* If we consider an "emendation" equivalent to an error in spelling, and hold to the "one-letter rule," the Lepidopterous *Blepharocera*, Chambers, stands, preoccupied neither by the Dipterous genus nor by *Blepharocerus*, Blanchard. This seems to me the proper course, following the spirit of the International rules, and the obviously wise principle that names should not be changed without absolute necessity.

of Ragged Robin, which have been since kindly identified by the late Mr. Rowland-Brown as *Z. trifolii*. We returned home on the 18th.

From larva feeding in purses at the end of osier leaves picked in our beds in September I reared a few specimens of *Gracilaria stigmatella* and its ichneumon, *Angitia virginialis*, Grav. The latter was kindly identified by Mr. Morley. I beat out a ♂ *Exapate congelatella* from a hedge near here for the first time on October 14th. *Tephroclystis pulchellata* began emerging on June 4th, 1921, from pupæ brought from Towyn. In conclusion my thanks are due to Mr. E. Meyrick, F.R.S., for identifying most of the micros.

23, Heathville Road,
Gloucester;
June 10th, 1921.

A SYNOPSIS OF BRITISH PROCTOTRYPIDÆ (OXYURA).

BY CLAUDE MORLEY, F.E.S., F.Z.S., ETC.

(Continued from p. 135.)

16. PROCTOTRYPES HYALINIPENNIS, sp. nov.

A black and finely pubescent species; tegulæ, base of flagellum obscurely, and the legs except basally, clear red. Superficially very like the last species, but abundantly distinct in its longer head, short, stout and filiform flagellum, whereof the joints are parallel-sided, and nearly truncate at both extremities, with the seventh to twelfth but slightly longer than broad, the radial appendix is wanting, the metathorax is shorter and apically less attenuate, with its disc less smooth; the abdomen is slightly, and the legs very distinctly shorter, with the terebra very nearly straight. The orbicular head is not at all broader than long in ♀ and but slightly so in ♂, and resembles that of *P. clavipes*, Thoms., but the short metathorax with its finely sculptured disc, and the equally long third and thirteenth antennal joints, render it distinct. In the ♂ the flagellum is more slender than in ♀, though its joints are equally cylindrical and truncate. Length $3\frac{3}{4}$ –5 mm. ♂ ♀.

Types of sexes in author's collection.

Doubtless a winter species, since of my single pair, the female was swept from thistles (*Cnicus palustris*), in marshy ground at Bentley Woods so late in the year as November 16th, 1895, and Mr. W. H. Tuck kindly sent me the male, taken by him during May, 1899, at Tostock, in Suffolk.

17. PROCTOTRYPES MICRURUS, Kieff.

Serphus micrurus, Kieff, in André, Spp. Hym. Eur., x, p. 312.

Hitherto known from only Portugal and France. I am enabled to introduce this species as British on the strength of three females taken by me on October 2nd, from the inside of a dead rabbit at Bentley woods, near Ipswich; another captured with these is now lost. All four were probably no more than sheltering here from the weather, since with them were no insects but the Braconid, *Meteorus filator*, Hal. (cf. 'Entom.,' 1908, p. 150), a Lepidopterous parasite.

18. PROCTOTRYPES VIATOR, Hal.

Proctotrupes viator, Hal., l.c., p. 12. ♂ ♀; Voll., l.c., p. 31, pl. xix, fig. 7, ♀. *Serphus viator*, André, l.c., p. 311.

Southern and western Europe from the Crimea to France, from May to September. Common in woods in both Ireland and England, though less frequent than *P. pallidipes* (Haliday and Walker), Scotland (Cameron). We have nothing published respecting its economy but Curtis' two records: he says ('Farm Insects,' p. 198) "that on opening the cells of the specimens of this beetle [*Nebria brevicollis*, Fab.] I found them partly consumed, and the other had produced six specimens of *P. viator* (?), thus showing that this parasite keeps in check . . . the larvæ of ground beetles." Kieffer omits the query, carefully perpetuated by van Vollenhoven, whom he obviously copies, for he omits Curtis' more certain record from another ground beetle, *Pterostichus vulgaris*, Linn. (*lib. cit.*, p. 131), thus: the larvæ of *Omaseus melanarius* are "frequently infested by a parasite called *P. viator*." It is remarkable that entomologists nowadays ascribe the host to the Staphylinidæ; thus Edward Step sent me four bred in 1909 "from *Creophilus maxillosus*" at Worcester Park in Surrey; K. G. Blair gave me three bred at the end of April, 1913, "from *Ocypus olens*" larva at Eastbourne in Sussex, and Dr. T. A. Chapman was interested in an "*Ocypus olens*" larva found at Reigate, in Surrey. I have recorded ('Trans. Entom. Soc.,' 1907, p. 9) the occurrence of a similar larva in my Monks Soham garden. A later record is that of a "*Coleopterous larva*" dug up in a garden at Skegby in Notts during July, 1917, whence two imagines emerged the same month. Charles Nicholson, in 1918, met with two instances of "*Coleopterous larvæ*," dug up in a Walthamstow garden, each producing about fifteen of these parasites. It is more than probable that Frohawk's record ('Entom.,' 1886, p. 225) also refers to the present species, since *Exallonyx ater* has hitherto been so little understood. *P. viator* is everywhere common, and I have records from Suffolk, Wiltshire, Hampshire, etc., up to Banchory in the Kincardine highlands of Scotland, where Elliott found it not uncommonly.

19. PROCTOTRYPES CHITII, sp. nov.

A shining species with the frons normal, metathorax except basally scabriculous, terebra hooked and a dark spot below the alar stigma; abdomen oblong and apically subtruncate. Similar to *P. viator* in its wings, centrally unicarinate and laterally mutic metathorax, red legs with all onychii nigrescent, deplanate frons and subdistinct discal nervures, but very different in having the radial cell so short as to be hardly distinct from the stigma, head buccate and in ♀ but slightly broader than long, all the coxæ red, disc of metathorax subtriangularly nitidulous to its base with this area weakly circumcarinate, and remainder of metathorax more finely rugulose; second segment basally less compressed with more feeble striæ, terebra longer and stout, strongly arcuate, much longer than metatarsus, and as long as half segment; legs also very much longer, and the hind ones nearly double abdominal length, all the onychii and onyches of ♀ black with the anterior distinctly explanate though simple. Length 5 mm. ♂ ♀.

Types of sexes in author's collection.

The late Arthur John Chitty, M.A., recognised this species as undescribed when working through the genus in 1907, and had distinguished it by a MS. name. It is peculiarly his, since he captured the unique female near his country house at Huntingfield, in Kent, on September 2nd, 1905, and the male in the same district of Faversham on October 8th, 1906. I here do myself the honour of perpetuating the memory of a most brilliant entomologist and intimate friend.

EXALLONYX, Kieffer.

Bull. Soc. Hist. Nat. Metz, xi, 1904, p. 34.

This genus differs from the subgenus *Phænoserphus* of *Proctotrypes* in little but the explanate anterior onychii and their remarkably trifid onyches. Eighteen palæarctic species and some from America were known in 1908.

TABLE OF SPECIES.

- | | |
|-------|---|
| (16). | 1. Radial cell at most half length of the normal stigma. |
| (15). | 2. Second, large abdominal segment basally striate. |
| (8). | 3. Frons deplanate, not elevated above antennal insertion. |
| (7). | 4. Metathorax discally smoother; antennæ mainly nigrescent. |
| (6). | 5. Antennæ of ♀ slender, reaching to abdominal centre. |
| | 1. <i>longicornis</i> , Nees. |
| (5). | 6. Antennæ of ♀ stout, not reaching beyond thoracic apex. |
| | 2. <i>brevicornis</i> , Hal. |
| (4). | 7. Metathorax reticulate throughout; antennæ flavous. |
| | 3. <i>xanthocerus</i> , Kieff. |

the solitary female I have examined was captured on July 28th, 1917, by Prof. J. W. Carr, at Lambley, near Nottingham.

3. *EXALLONYX XANTHOCERUS*, Kieff.

Exallonyx xanthocerus, André, Spp. Hym. Europ., x, 1907, p. 332, ♀.

Head transverse, but not twice as broad as long; frons deplanate; mandibles and palpi flavidous. Antennæ unicolorous bright flavous throughout, as long as head and thorax; flagellum of ♀ slender with exactly cylindrical joints, of ♂ somewhat stout and apically attenuate; in both sexes the third joint slightly longer than the stout scape and twice as long as broad, the penultimate half as long again as broad and a little shorter than the apical joint. Thorax nitidulous; pronotum laterally tuberculate; metathorax gradually declived, evenly reticulate to base and longitudinally unicarinate throughout. Abdomen with the ♀ segments three to six brunneous; petiole transverse, and like base of second segment, striate; terebra arcuate and a fourth of second segment, or three-fourths of metatarsis, in length. Legs slender and clear flavous, with only the claws and base of ♂ hind coxæ infuscate; the large hind calcar one-third of the metatarsal length. Wings hyaline, tegulæ flavous; stigma semicircular and double length of radial cell; discal nervures wanting. Length 3·5–4 $\frac{3}{4}$ mm. ♂ ♀.

The male has not before been recognised, and the female was described from Italy. But these insects have been so little worked that it is not very surprising to find this species in southern England; it is doubtless rare with us and cannot extend far north, as it is unknown in Suffolk. I had the good fortune to beat a single male from oak-boughs in the Wilverley Inclosure of the New Forest on July 11th, 1909. The orange antennæ render it extremely conspicuous.

(To be continued.)

NOTES AND OBSERVATIONS.

H. ROWLAND-BROWN: A CORRECTION.—On page 122 of the present volume the statement is made that the late Mr. Rowland-Brown had bequeathed his collections and library to the Entomological Society of London, with remainder to the Hope Museum, Oxford. This statement, for which I was not responsible, although made on the best authority, is incorrect. Mr. Rowland-Brown's bequest is actually as follows: Such books in his library as the Entomological Society of London does not possess sufficient copies of are bequeathed to it; with the remainder of the books and the whole of his collections to the Hope Museum, Oxford.—W. G. SHELDON.

A SYNOPSIS OF BRITISH PROCTOTRYPIDÆ (OXYURA).

BY CLAUDE MORLEY, F.E.S., F.Z.S., ETC.

(Continued from p. 161.)

4. EXALLONYX FUMIPENNIS, Kief.

Exallonyx fumipennis, André, Spp. Hym. Europ., x, p. 339, ♂.

The female of this species differs from the male in nothing but its sexual characters and in having the antennæ stout with the six basal flagellar joints subserrate, and in its greater length of $4\frac{1}{2}$ mm. The typical male form is from Austria and not yet recorded from Britain; the female is here described for the first time.

The British varietal male was taken in England with the ant, *Myrmica scabrinodis*, by Donisthorpe, and subsequently in France by André. But the typical form also occurs here, since Tuck sent me one from Tostock in Suffolk during September, 1900; and both sexes have occurred to me in the same county at Eriswell, where I swept the new female from dry grasses, and at Tuddenham Fen, as well as at Edwinstow in Sherwood Forest, all during August.

5. EXALLONYX NIGER, Panz.

Codrus niger, Panz., Faun. Germ., viii, 1805, p. 85, pl. ix, ♂. *C. pallipes*, var., Nees, l.c., p. 357, ♀ ♂. *Proctotrupes nigra*, Spin., Ins. Lig., 1808, p. 168. *P. niger*, Latr., l.c., 1809, p. 38; Hal., l.c., p. 7, ♂ ♀. *Exallonyx niger*, André, l.c., p. 340.

Var. PALLIDISTIGMA, var. nov.—Under this name Chitty had ranged as a distinct species a number of specimens differing slightly from the typical form in having the stigma testaceous and quite remote from the apical abscissa of the radial nervure, leaving the radial cell comparatively broad. It is a good deal rarer than the ordinary form; Piffard has found it at Felden, Saunders at Reigate, Morey at Rookley in the Isle of Wight; I have taken it on the Felixstowe cliffs in Suffolk and swept it at Wicken Fen in Cambs.

Italy, Hungary, Switzerland, Germany, France, Sweden, etc. Not infrequent in woods during autumn; found by Walker and Haliday, presumably in both England and Ireland. Vollenhoven tells us (Pinac., p. 31) that it has been bred from the fungus-gnat, *Brachycampta griseicollis*, Staeg., which occurs in England. This is one of our most abundant species of the subfamily, though very rarely seen on the boulder-clay at Monks Soham and never on honey-dew; it is nearly always

taken by sweeping, usually in shady glades of woods in the afternoon, and I have dates from May 15th pretty continuously to October 5th. Rookley (Morey), Surrey (W. Saunders), Herts (Piffard), Suffolk (Tuck), Cambridge (Lyle), Derby and Notts (Carr), Yorks (Fordham). I have taken it at Newport, Ryde and Norton in the Isle of Wight, Lyndhurst, Wicken Fen, West Leake and Edwinstow in Sherwood, all over the light lands of Suffolk, at Killarney and on Clare Island in Ireland, and Elliott has sent it from Banchory in the Scots highlands.

6. EXALLONYX ATER, Nees.

Coirus ater, Nees, *l.c.*, p. 359, ♂ ♀. *Proctotrupes ater*, Hal., *l.c.*, p. 8; Voll., *l.c.*, p. 28, pl. xix, fig. 4. *Exallonyx filicornis*, Kief., André, *l.c.*, p. 341; cf. p. 325, ♂ ♀.

I do not consider Kieffer has satisfactorily demonstrated distinction between this species—which he did not know and places as insufficiently described in his subgenus *Cryptoserphus*, solely upon van Vollenhoven's (often faulty) authority—and that of Haliday, followed by Thomson. Frohawk, in the record noted below, refers to an apterous form of this species, but he does not make it plain whether it were an atrophied imago, like *Proctotrypes curtipennis*, or merely a pupa which had failed to attain maturity.

Germany, where Nees says it infests the larvæ of *Mycetophila* in fungi, particularly *Boleti*, about which he took it frequently in woods during October, as well as in copula on June 19th, 1810; Finmark and a variety in marine detritus in Heligoland. Ireland (Haliday) and England (Walker). Not very common with us; Olveston in Gloucester (Charbonnier); Ashfield Parva in Suffolk (Elliott); Wymondley in Herts (Butler), West Leake woods in June and September (Carr); Pakefield cliffs on sand and Lowestoft dunes among marram-grass; Brandon staunch, on long grass at Ousden, once at Monks Soham on under-side of lime-leaf at dusk, in Suffolk; and in Guestling wood near Hastings. It is on the wing from June 11th to September 24th. Cf. Frohawk's breeding at Eltham in Kent from the larvæ of the rove-beetle, *Creophilus maxillosus*, in the 'Entomologist,' 1886, p. 225.

7. EXALLONYX LIGATUS, Nees.

Codrus ligatus, Nees, *l.c.*, p. 359, ♀. *Proctotrupes ligatus*, Hal., *l.c.*, p. 8, ♂ ♀; Voll., *l.c.*, p. 31, pl. xix, fig. 9, ♀. *Exallonyx ligatus*, André, *l.c.*, p. 344.

From Sweden and France through Spain and Italy to Algeria; common on autumn fungi in woods; Vollenhoven records it from the British fungus-gnat, *Mycetophila punctata*, Mg. Very frequent everywhere; found in rotten seaweed, fungi,

etc., by Haliday and Walker. My dates are May 27th to October 27th, excepting July, by general sweeping and on reeds, on leaves of oak and lime, and house windows; at Foxhall, Hulver, Ipswich, Monks Soham, Wherstead, Bramford, Wangford, Covehithe, South Cove and Southwold in Suffolk. New Forest in May and September (Lyle); Lambley, Southwell and Nuttall in Notts (Carr); Oxshott (Newbery), Reigate (Saunders) and Kew (Sich) in Surrey. That it more likely preys upon some subterranean beetle than upon the above gnats is evidenced by Keys, who bred it at Plymouth in Devon on May 10th, 1909, from a mole's nest.

8. EXALLONYX LAEVIVENTRIS, Kief.

Exallonyx leviventris, André, Spp. Hym. Europ., x, p. 330,

♂ ♀.

England (P. Cameron); Austria (Trieste), Kieffer, *l.c.* I have seen no specimen of this subfamily with smooth second segmental base, though my search has been comprehensive.

9. EXALLONYX WASMANNI, Kief.

Exallonyx Wasmanni, André, Spp. Hym. Europ., x, p. 328,

♂ ♀.

The type form was taken with *Myrmica ruginodis* in Germany, and has not hitherto been known in Britain. The var. *socialis*, Kieff. (*l.c.*), differs in having the legs flavescent, and the radial cell one-third shorter than the stigma. This variety was discovered near London with the ant, *Lasius fuliginosus*, by Donisthorpe during September. The typical form is, however, found with us, for Chitty captured a male in the Faversham district of Kent on May 19th, 1906; but I have no doubt that it is rare, and probably confined to chalky places, since two females alone have fallen to my net, one during the following August at Ringstead Downs in West Norfolk, and the other on August 14th, 1908, as it was flying about the face of the sandy Corton cliff at Lowestoft on the Suffolk coast.

PARACODRUS, Kieffer.

André, Spp. Hym. Europ., x, 1907, p. 273.

This genus has usually been regarded as distinct from the broad genus *Proctotrypes* under the name *Codrus*, Jurine, which was restricted to it by Thomson in 1857; but, since it is really synonymous, the erection of *Paracodrus* must be accepted. The only other species of this genus, *P. albipennis*, Thoms., has been erroneously synonymised with the first, not known as British.

TABLE OF SPECIES.

- (2). 1. *Terebra* distinctly exserted; radial cell of ♂ short.
 1. *apterogynus*, Hal.
 (1). 2. *Terebra* not exserted; radial cell of ♂ elongate.
 2. *Bethyliformis*, Kf.

1. PARACODRUS APTEROGYNUS, Hal.

Proctotrupes apterogynus, Hal., *l.c.*, p. 15, ♂ ♀. *Codrur apterogynus*, Ashm., Bull. U.S. Nat. Mus., 1893, p. 344, pl. xiii, fig. 8. *Paracodrur apterogynus*, André, *l.c.*, p. 276. (?) *Codrur apterogynus*, Voll., *l.c.*, p. 28, pl. xviii, figs. 1 and 2, ♂ ♀.

That the female is sometimes fully winged has not before been noticed; this form differs in no way but in the thoracic modifications usual in such cases from the commoner apterous form, and the neurulation is exactly as in the male, which is by far the rarer sex. I find that I beat a specimen of the macropterous female from bushes in the village of Depden at the very highest point (420 ft.) of Suffolk on September 24th, 1907; and that the late Mr. Albert Piffard has given me a second, unnamed, collected by him at Felden, taken upon the top of a dry hill bearing such herbage as *Genista anglica*, etc., above Boxmoor station in Herts; though an example, labelled by Chitty "*astigmaticalis*, sp. nov.," was found by the latter on September 24th, 1904, in the Sheppy marshes of East Kent—perhaps an inland form, carried in the last instance by the wind.

P. apterogynus was originally discovered by Francis Walker near London and on the south English coast between June and September (Haliday). I have heard of no records later than 1839, and it is still unknown on the Continent. With us the species is distinctly uncommon, and my collection contains hardly a score of specimens captured between July 19th and October 7th; it is certainly an autumn insect, commonest in August and September. It has usually occurred to me in very marshy situations on *Lythrum salicaria*, by the river Gipping, at Ipswich, in 1898, by the Gipping at Claydon, in a marsh at Ashfield Parva and a moist wood at Wangford, near which it has several times turned up on the coast at Southwold and Easton. Other Suffolk localities are Corton, near Lowestoft, where it was running on bare sand, half way up the face of the cliff in 1898 (Elliott); Monks Solham, where it was swept in a pasture containing an old moat in 1909 (Newbery), and the Bentley Woods; Felden, in Herts, and Hursthill, in the New Forest (Morley); Malvern, in Worcester, during 1905 (Gorham); and Battle, in Sussex, during August, 1881 (Butler).

Nothing has hitherto appeared respecting its economy. The Irish National Museum in the autumn of 1919 sent me an apterous female of this species for determination, with the intimation that it had recently been bred along with identical

specimens from a larva of the Coleopterous genus *Agriotes*, found at Bangor, in Devon. This is valuable, for it enables us, with some degree of certainty, to ascribe to the present parasite the three old breedings of "*Proctotrypes*" from the same ubiquitous Elaterid genus: (1) William Kirby knew at 'Introd. Entom.,' 7th ed., 1859, p. 154, "the destroyer of the wireworm, which belongs to Latreille's genus *Proctotrupes*"; (2) Curtis, at 'Farm Insects,' p. 159, says the above parasite was from Starston, in Norfolk, and that the host was *Agriotes obscurus*, Linn. He adds, at p. 181, that he himself found two or three white maggots, and another had already pupated from which he could see that it was a *Proctotrypes* species; further, he quotes Bierkander in 'Communic. Bd. Agric.,' vol. iv, p. 414, who had a similar experience; (3) Curtis, at 'Farm Insects,' p. 198, refers to *Proctotrypes*-larvæ, figured at pl. g, fig. 46, protruding from a beetle larva, which he considers to be *Agriotes lineatus*, Linn., found during August, 1841, in Surrey. In a general way I consider that all the more reliable of our records point to the parasitism of the PROCTOTRYPINÆ upon Coleoptera rather than upon Diptera, as was supposed by the older authors. On the other hand, there can be no doubt that Diptera are the staple hosts of our next subfamily, the BELYTINÆ.

2. PARACODRUS BETHYLIFORMIS, Kieff.

The terebral length of this insect appears hardly a specific character; the radial nervure of the present genus is so weak as to be difficult to trace, and Kieffer gives no distinction from *P. albipennis*, Thoms.; moreover, the fact that he did not know *P. apterogynus* renders it far from improbable that all three are no more than forms of a single species. *P. bethyliformis* is simply recorded thus: "England (P. Cameron)," by its author.

Monks Soham House, Suffolk;
March 10th.

NOTES AND OBSERVATIONS.

***Lycæna adonis* in Bucks, and an Appeal.**—When at Folkestone in September, 1920, I sent about a gross of living females of *L. adonis* to friends to be liberated in suitable localities on the Oxon, Bucks and Herts Chilterns. The Bucks ground in particular appears to be well suited to the species' requirements, as there it is increasing in numbers with each brood and also spreading. Might I earnestly appeal to collectors not to take the insects, especially the females, before the autumn of 1923, so as to give *adonis* a chance to become firmly established. It seems necessary to make this request as I understand a London entomologist has already been down to Princes Risborough this spring and taken away about 200 specimens. This quantity at a time when the butterfly is endeavouring to secure a footing is a serious matter. I may here mention that *Lycæna*