ANNALES HISTORICO-NATURALES MUSEI NATIONALIS HUNGARICI
Tomus 57. PARS ZOOLOGICA 1965.

A Revision of the Genus Retocomus Casey (Coleoptera, Anthicidae)*

By Mohammad Abdullah, Quebec**

The genus *Retocomus* Casey is a member of the tribe Eurygeniini (Casey, [7] 1895: Abdullah, [4] 1964). The key characters used in distinguishing from other genera are: eyes distinctly emarginate near antennal insertions; tempora prominent; apical segment of maxillary palp securiform to subcultriform; and in males, metasternum usually spinous and usually legs with ctinidia, and seventh abdominal sternite laterally produced and spinous at apex (Abdullah, [1] 1963).

In order to identify the species of this genus it is essential to examine the aedeagus (tegmen + median lobe) and the outlines of the last one or two sternites and tergites. Where the aedeagus is not naturally extruded, it has to be carefully dissected out but it is possible to follow the outlines of the sternites and tergites without dissection. A few drops of alcohol or glycerine on the abdomen of the dried specimen should help. I have made the drawings in glycerine medium and in the case of sternites and tergites only the outline is shown.

Detailed measurements are given for two species (*R. murinus* and *wildii*). The proportions are not much different from *murinus* in the remaining species.

The two sexes are easy to separate. The metasternum is usually spinous in the male and never so in the female. The male has ctinidia which the female lacks. The hind tibiae are dilated and laterally compressed in some males but not in females. The seventh abdominal sternite has spinous arms in the male only. Where the genitalia are naturally partly extruded there should be not difficulty in identifying the sex. Finally, males are usually slightly smaller than females.

The genus *Retocomus* Casey is recorded only from the United States and but for two species (*murinus* and *wildii*) is confined to California and neighbouring States (see maps 1 – 3). Localities not known to me but mentioned on labels are indicated by an asterisk(*) in the text. Additional collecting will certainly reveal many interesting distributional records and perhaps some undescribed species too. It is now up to entomologists in America to discover the females of some species and the immature stages of all of them.

The following abbreviations are used: AMNH = American Museum of Natural History, New York; BM = British Museum (Natural History), London; CAS = California Academy of Sciences, San Francisco; CDA = California Department of Agriculture; CNHM = Chicago Natural History Museum; CU = Cornell University; DEI = Deutsches Entomologisches Institut, Eberswalde; HNHM = Hungarian Natural History Museum, Budapest; HU = Harvard University; HUB = Humboldt University, Berlin; ISNHS = Illionis State Natural History Survey; MA = Author's collection; PM = Paris Museum; PhANS = Philadelphia Academy of Natural Sciences; SJSC = San Jose State College, California; USNM = U.S. National Museum, Washington; UC = University of California, Davis; UCB = University of California, Berkeley; UI = University of Idaho, Moskow; UK = University of Kansas; UL = University of Lund; UMich = University of Michigan; UMiss = University of Missouri.

* Publication number 21 on Coleoptera. Portion of a Ph. D. thesis.

** Department of Entomology, Macdonald College of Mc Gill University, Quebec, Canada.

Retocomus CASEY

Retocomus CASEY ([7] 1895, p. 628); ABDULLAH ([1] 1963, p. 595); ABDULLAH ([3] 1964, p.27)
Ichthidion HALDEMAN ([8] 1843, nomen nudum and nomen oblitum.

Colour. Brownish-black; elytra with white spots.

Vestiture. Pubescence hirsute, partly concealing surface below; dimorphic on elytra, consisting of small clusters of white to brownish yellow (ochraceous) decumbent hairs and of sub-erect to erect brownish black (fuscous) hairs; former responsible for elytral maculations and appearance of ventral surface. In males, dense fuscous to black spines present on metasternum; ctinidia present on tibiae of fore legs and on trochanters, femora and tibiae of middle legs; rarely metasternum not spinous (in *wildii* tibiae without ctinidia and elytra vittate).

Punctures coarse.

Head widest across eyes, nearly as wide as pronotum at its widest part; tempora prominent; vertex usually with a median sulcus; in one species *(wildii)* clypeus deeply ridged and produced in front, partly concealing base of labrum, simple in other species: eyes narrowly, usually deeply but always distinctly emarginate near antennal insertions. Labrum entire, broadly rounded in front; in one species *(wildii)* emarginate. Mandibles entire at apices, longer than wide; molar lobe large, with well-developed transverse ridges; incisor lobe well-developed; prostheca large, fringed (fimbriate) at apex (fig. 147). Apical (= fourth) segment of maxillary palp securiform in *wildii* (fig. 148), subcultriform or triangular, slightly elongated (fig. 113) in others; excavated laterally. Apical (= third) segment of labial palp securiform. Antennae filiform; last (= eleventh) segment slightly longer than tenth segment, more so in males than in females, at most not much more than twice in length.

Pronotum nearly as long as wide in *wildii*, longer in others; widest subapically above middle; campanulate; surface sculpture partly visible; sometimes with a distinct median sulcus; shape similar to *Stereopalpus* (see ABDULLAH [3] 1964, fig. 34) and *Pergetus* but not to *Duboisius* or *Eurygenius reichei*. Mes-episterna meeting in front of mesosternum. Wing with anal cell closed. Hind tibiae usually dilated and laterally compressed in males.

In males, seventh (= fifth visible) abdominal sternite usually deeply emarginate, with or without a central process, with apical lateral arms or processes beset with spines of different sizes; seventh tergite entire or with a weak median process apically; eighth sternite with central and lateral processes, with a characteristic sclerotized area at base; eighth tergite entire or slightly emarginate; orientation of tegmen and median lobe variable; parameres usually with a pair of lateral or slightly dorsolateral spines near apex, spines rarely absent or an additional inner dorsal pair also present; usually with a median, narrow longitudinal ridge and a pair of lateral broad, longitudinal ridges; basal-piece of tegmen with a median ventral ridge and dorsally curved central hook-like process basally; median lobe with cuticular blades longitudinally serrate and with short median struts. In females, seventh sternite entire, emarginate or trilobed at apex; seventh tergite usually with three distinct spinous processes, lobes rarely extremely reduced or absent; ovipositor with styli borne on apices of (apparently incompletely) two-segmented coxites, sparsely, finely hairy at apex, valvifers reduced to baculi.

Type of the genus: *Retocomus murinus* (Haldeman).

Remarks. *Retocomus* resembles *Duboisius* (ABDULLAH, [6] 1964) in having several secondary sexual modifications: spines on metasternum in males; spinous, lobed seventh abdominal sternites of males and seventh tergites of females but differs in

lacking entire eyes and in the shape of the pronotum. In the last two mentioned characters as well as in the shape of the aedeagus *Retocomus* resembles *Mastoremus* (ABDULLAH, [5] 1964). The latter genus, however, lacks the secondary sexual modifications. Now *Mastoremus* is more closely related to *Retocomus* then we would expect that the similar secondary sexual modifications have independently evolved in *Duboisius* and *Retocomus* by convergence, and are to be regarded as derivative features. The other alternative is that these modifications were original features of the common ancestor of *Duboisius* and *Retocomus*, if there was one, and that in those species of the two genera where they no longer exist, the loss is a derivative feature and the condition secondarily produced. The male of *Eurygenius reichei* is not known and we do not know whether it has the secondary sexual modification (ABDULLAH, [2] 1964). More facts are needed before we can come to a sound conclusion. I, therefore, postpone a consideration of their phylogeny.

It is, however, obvious that *Retocomus wildii* is quite distinct from the remaining species in a number of features: labrum emarginate; clypeus deeply ridged and produced in front; apical segment of maxillary palp securiform (Fig. 148); tibiae without ctinidia in males; elytra vittate; metatrochanters spinous in males; and seventh abdominal sternite strongly trilobed in males (Fig. 149).

Key to the species

1. Clypeus deeply ridged and produced in front; each elytron with five, usually complete longitudinal stripes; in males metatrochanters spinous and tibiae without ctinidia
17. **wildii** (LECONTE)

– Clypeus neither deeply ridged nor produced in front; elytra without such stripes; in males metatrochanters never spinous and ctinidia present on tibiae of front and middle legs. 2

2. Eastern United States, not extending west of Oklahoma (see figs. 114 – 121)
13. **murinus** (HALDEMAN)

– Western United States, not extending east of Colorado. 3

3. Ctinidia present on tibiae of front and middle legs; metasternum usually spinous (males) 4

– Ctinidia absent on legs; metasternum never spinous (females) 18

4. Tegmen without spines (fig. 111) (see figs. 107 – 112) 12. **mockfordi** sp. n. ♂

– Tegmen with spines. 5

5. Tegmen with two pairs of spines (fig. 60) (see figs. 56 – 62) 7. **crowsoni** sp. n. ♂

– Tegmen with one pair of spines. 6

6. Tegmen with a pair of inner dorsal spines (fig. 15) (see figs. 11 – 17)
2. **basiri** sp. n. ♂

– Tegmen with a pair of outer lateral or dorsolateral spines (see fig. 5.) 7

7. Tegmen deeply constricted behind the spines (fig. 52) (see figs. 48 – 53)
6. **crichtoni** sp. n. ♂

– Tegmen never deeply constricted behind the spines (see fig. 32) 8

8. Tegmen extremely short in front of spines (as in figs. 71, 95) 9

– Tegmen much longer in front of spines (as in fig. 43) 10

9. Tegmen truncate at apex (fig. 71); seventh abdominal sternite with broad arms (fig. 67); California (see figs. 67 – 73) 8. **duboisi** sp. n. ♂

– Tegmen pointed or rounded at apex (fig. 95); seventh abdominal sternite with narrow arms (fig. 91); Arizona and Colorado (see figs. 91 – 96) 10. **kaszabi** sp. n. ♂

10. Seventh abdominal sternite with short arms (see fig. 39) 11
– Seventh abdominal sternite with long arms (see fig. 99) 13

11. Utah and Colorado (see figs. 122 – 129) 14. **qadrii** sp. n. ♂
– California 12

12. Tegmen with a gradually narrowed tapering apex (fig. 43); San Diego County (see fig. 39 – 45) 5. **constrictus** (LeConte)
– Tegmen with an abruptly narrowed, comparatively less tapering apex (fig. 5); north of San Diego County (see figs. 1 – 7) 1. **alami** sp. n♂

13. Seventh abdominal sternite with narrow arms (fig. 99) (see figs. 99 – 104) 11. **lindrothi** sp. n. ♂
– Seventh abdominal sternite with broad arms (see fig. 132) 14

14. Oregon, north eastern California (north of Placer County), Nevada and Utah (see figs. 132 – 134) 15. **rehni** sp. n. ♂
– California (not north east) 15

15. Median lobe with large numbers of teeth all along the bases of the cuticular blades (fig. 85) (see figs. 78 – 85) 9. **gratus** Casey ♂
– Median lobe with a few teeth at the bases of the cuticular blades (see fig. 35) 16

16. Seventh abdominal sternite with slightly divergent arms (fig. 18); not extending north of San Bernandino County (see figs. 18 – 24) 3. **brittoni** sp. n. ♂
– Seventh abdominal sternite without divergent arms (see figs. 28, 138); extending north of Kern County 17

17. Seventh abdominal sternite with a central process at apex (fig. 138); tegmen more pointed at apex and less constricted behind spines (fig. 142); Monterey County (see figs. 138 – 144) 16. **riletti** sp. n. ♂
– Seventh abdominal sternite without a central process at apex (fig. 28); tegmen less pointed at apex and more constricted behind spines (fig. 32); west of Monterey County (see figs. 28 – 35) 4. **colasi** sp. n. ♂

18. Seventh abdominal tergite neither distinctly lobed nor produced at apex (see fig. 65) 19
– Seventh abdominal tergite distinctly lobed or produced at apex (see figs. 98, 136) ... 21

19. Seventh abdominal tergite very slightly emarginate at apex (fig. 65) 7. **crowsoni** sp. n. ♀
– Seventh abdominal tergite never emarginate 20

20. Seventh abdominal sternite emarginate at apex (fig. 54) 6. **crichtoni** sp. n. ♀
– Seventh abdominal sternite entire at apex or weakly trilobed (figs. 74 – 75) 8. **duboisi** sp. n. ♀

21. Seventh abdominal tergite with central process longer than lateral processes (see figs.
– 27, 98) 22
Seventh abdominal tergite with central process not longer than lateral processes (see figs. 66, 90) 31

22. Seventh abdominal sternite trilobed at apex (see fig. 46) 23
– Seventh abdominal sternite not trilobed at apex (see figs. 25 – 26) 24

23. Seventh abdominal tergite with a narrow central process and well-developed lateral processes (fig. 106) 11. **lindrothi** sp. n. ♀
– Seventh abdominal tergite with a broad central process and with weakly developed lateral processes (fig. 47) 5. **constrictus** (LeConte) ♀

24. Seventh abdominal sternite entire at apex 25
– Seventh abdominal sternite emarginate at apex 28

25. Seventh abdominal tergite with very short processes (fig. 98); Arizona and Colorado 10. **kaszabi** sp. n. ♀
– Seventh abdominal tergite with much longer processes (see fig. 146); California 26

26. Seventh abdominal tergite with broadly rounded central process (fig. 27); not extendin north of San Bernardino County 3. **brittoni** sp. n. ♀
– Seventh abdominal tergite with narrow, pointed or truncate central process (figs. 37, 146) north of San Bernardino County. 27

27. Seventh abdominal tergite with central process widest at base, gradually narrowing apically, pointed at apex (fig. 146); Monterey County 16. **riletti** sp. n. ♀
– Seventh abdominal tergite with central process widest in middle, slightly narrowing at both ends, truncate at apex (figs. 37 – 38); west of Monterey County 4. **colasi** sp. n. ♀

28. Seventh abdominal tergite with lateral processes not distinct (figs. 136 – 137) 15. **rehni** sp. n. ♀
– Seventh abdominal tergite with lateral processes distinct (see fig. 9) 29

29. Seventh abdominal tergite with central process only slightly longer and wider than lateral processes (fig. 131); Utah and Colorado 14. **qadrii** sp. n. ♀
– Seventh abdominal tergite with central process much longer and wider than lateral processes (see figs. 9, 27); California 30

30. Seventh abdominal tergite with central process rounded at apex (fig. 27) 3. **brittoni** sp. n. ♀
– Seventh abdominal tergite with central process truncate or weakly emarginate at apex (fig. 9) 1. **alami** sp. n. ♀

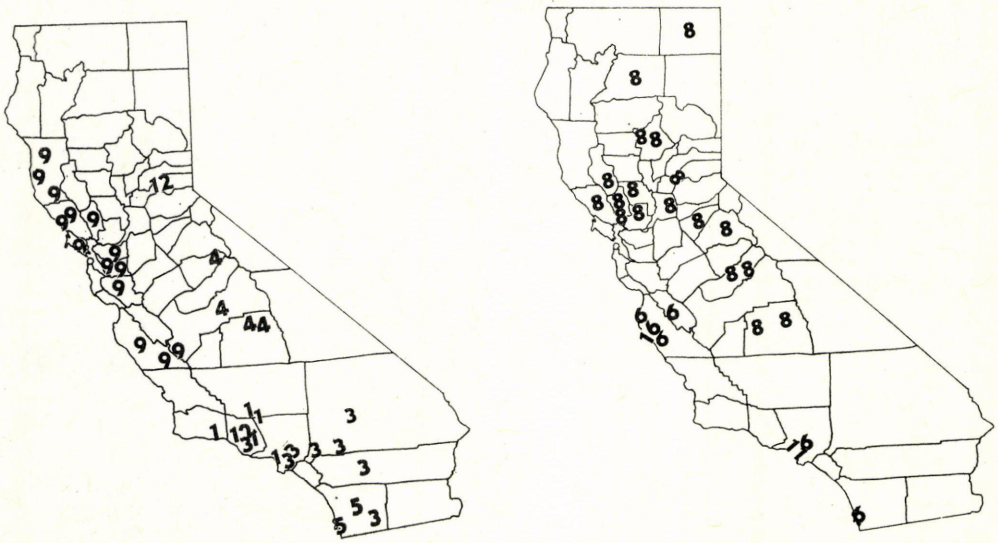
31. California: west coast, north of Santa Barbara County; seventh abdominal sternite never emarginate (figs. 86 – 87); apical lobes of seventh abdominal tergite, when developed, more pointed (fig. 90) 9. **gratus** CASEY ♀
– California: east and/or south of Santa Barbara County and Nevada; seventh abdominal sternite emarginate (fig. 64) or not; apical lobes of seventh abdominal tergite, when developed, less pointed (fig. 66) 7. **crowsoni** sp. n. ♀

1. **Retocomus alami** sp. n. (Figs. 1 – 10; Map 1)

Diagnosis. The short arms of the seventh abdominal sternite (fig. 1) in the male and the fairly large truncate central process in the seventh tergite of the female (fig. 9) should serve to distinguish this species from others in the same region: *basiri* (fig. 11), *brittoni* (figs. 18, 27), *crichtoni* (figs. 48, 55), *crowsoni* (figs. 56, 65 – 66) and *lindrothi* (figs. 99, 106).

Holotype. Male (author's no. 463), U. S. A., California, Ventura County, 5 miles east of Ojai, Dennison Park, July 2 (J. J. DUBOIS), in the California Academy of Sciences, San Francisco. Vestiture dense; metasternum not spinous. Eleventh antennal segment less than twice as long as tenth segment. Median pronotal sulcus not distinct, more or less covered by white, longitudinal row of pubescence. Hind tibiae neither dilated nor laterally compressed. Seventh abdominal sternite emarginate; with very short lateral arms or processes, without a central process at apex; sparsely, finely spinous at apex, subapically slightly depressed and less sclerotized (fig. 1). Seventh tergite entire at apex (fig. 2). Eighth sternite with nearly equally long central and lateral processes; membranous at base (fig. 3). Eighth tergite entire at apex (fig. 4). Parameres (fig. 5) tapering at apex; with a pair of dorsolateral spines near apex: a narrow median longitudinal ridge and a pair of wide lateral ridges present near apex. Median lobe as in (figs. 6 – 7). Length: 7.5 mm.

Allotype. Female (author's no. 464), U. S. A., California, Ventura County, 5 miles east of Ojai, Dennison Park, July 2 (J. J. DUBOIS), in the California Academy of Sciences. Differs from the holotype as follows. Median pronotal sulcus partly



Map 1. Geographical distribution of: (1) *Retocomus alami*, (2) *basiri* (3) *brittoni*, (4) *colasi*, (5) *constrictus* (9) *gratus* and (12) *mockfordi*. Map 2. Geographical distribution of: (6) *Retocomus crichtoni*, (8) *duboisi*, (11) *lindrothi* and (16) *riletti*.

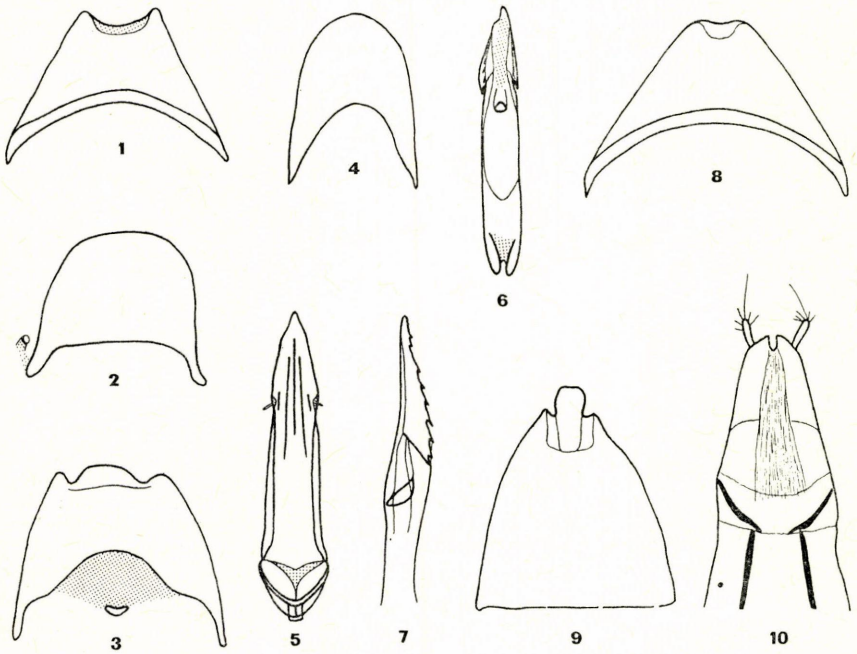
distinct. Seventh abdominal sternite emarginate at apex, with a very weak, finely spinous dorsal lobe (fig. 8). Seventh tergite trilobed at apex, central process much longer and wider than lateral processes, with a finely spinous ventral hook-like lobe (fig. 9). Length: 9.5 mm.

Paratypes. 17 designated. Records and Variation. U. S. A., California: Dennison Park, 5 miles east of Ojai, Ventura County, 3 ♀♀, July 2 (W. F. Barr) (CAS). Fillmore, Ventura County, 1 ♂, June 27 (B. E. White) (CAS). Lebec, 4000 feet, Kern County, 1 ♂, 5 ♀♀, May 15 (J. O. Martin) (CAS); 1 ♀ (CNHM); 1 ♂ (HNHM). Los Angeles, Los Angeles County 1 ♂ (author's no. 585), May 30 (BM). Sandburgs* (=Saudberg, Los Angeles County?), 1 ♂, June 26 (PhANS). Santa Barbara, Santa Barbara County, 1 ♂, August 16 (PM); 1 ♀ (DEI). Tejon Canyon, Kern County, 1 ♀, May 12 (BM).

Intraspecific variation occurs in the following characters: vestiture sparse or dense; elytra and legs black to brown; in males, metasternum spinous or not; median pronotal sulcus distinct or not; and length varies from 7.5 – 9.5 mm among males and from 9 – 11 mm among females.

Seasonal distribution. The species has been collected from May 12 to August 16.

Remarks. I have much pleasure in naming this species in honour of Dr. S. Mashhood Alam, Head, Section of Entomology, Department of Zoology, Aligarh Muslim University, India in appreciation of his kindness towards me during my post-graduate training in Entomology in 1955 at Aligarh.

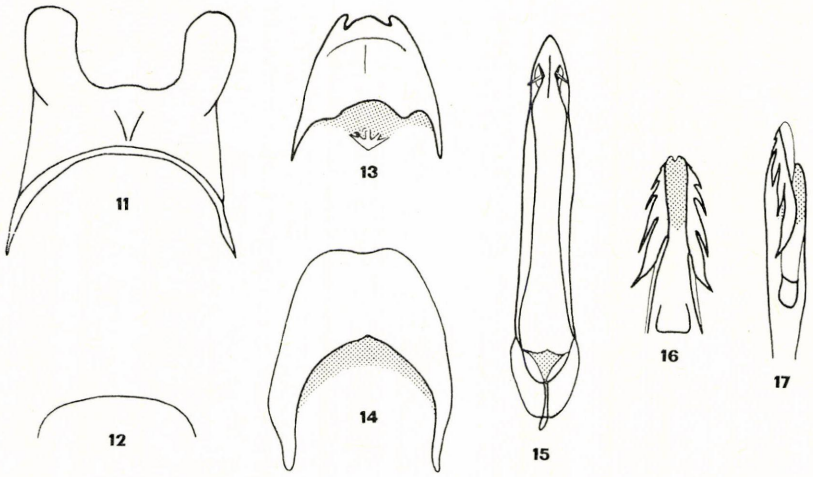


Figs. 1—10. *Retocomus alami* sp. n. 1: Seventh sternite of ♂, ventral view; 2: seventh tergite of ♂, dorsal view; 3: eighth sternite of ♂, ventral view; 4: eighth tergite of ♂, dorsal view; 5: tegmen of ♂, ventral view; 6: median lobe of ♂, ventral view; 7: apex of median lobe of ♂, lateral view; 8: seventh sternite of ♀, ventral view; 9: seventh tergite of ♀, dorsal view; 10: apex of ovipositor, ventral view.

2. **Retocomus basiri** sp. n. (Figs. 11—17; Map 1)

Diagnosis. In the male, the tegmen bears an inner pair of dorsal spines (fig. 15) and the eighth abdominal sternite has a characteristic sclerite at base (fig. 13). These characters should serve to distinguish this species from others in the same region: *alami* (figs. 3, 5), *brittoni* (figs. 20, 22), *crichtoni* (figs. 50, 52) and *crowsoni* (figs. 58, 60).

Holotype. Male (author's no 588) U. S. A., California, Ventura County, Sespe Cany (near Fillmore), May 10, in the British Museum (N. H.) London. Vestiture moderately dense. Eleventh antennal segment less than twice as long as tenth segment. Median pronotal sulcus not distinct, more or less covered by white, longitudinal row of pubescence. Hind tibiae dilated and laterally compressed. Seventh abdominal sternite deeply emarginate; with long, broad processes or arms and a weak central process at apex: with short and long, thick and thin spines at apex and below apex: subapically also depressed (fig. 11). Seventh tergite entire at apex (fig. 12). Eighth sternite with central process slightly shorter than lateral processes: (characteristically) membranous near base (fig. 13). Eighth tergite emarginate at apex (fig. 14). Parameres (fig. 15). slightly tapering at apex, with a dorsal pair of spines (dorsolateral ones missing), with weak ridges near apex. Median lobe as in (figs. 16—17), Length: 9 mm.



Figs. 11—17. *Retocomus basiri* sp. n. 11: Seventh sternite of ♂, ventral view; 12: apex of seventh tergite of ♂, dorsal view; 13: eighth sternite of ♂, ventral view; 14: eighth tergite of ♂, dorsal view; 15: tegmen of ♂, ventral view; 16: apex of median lobe, ventral view; 17: apex of median lobe, lateral view.

Remarks. I have much pleasure in naming this species in honour of Professor M. ABDUL BASIR, Department of Zoology Aligarh Muslim University, India in appreciation of his kindness towards me.

The unique specimen offers good distinguishing characters of the species, a unique feature of wich is the absence of the usual dorsolateral spines from the tegmen. So far the species is more similar to *crowsoni* than to any other species but the female remains to be discovered.

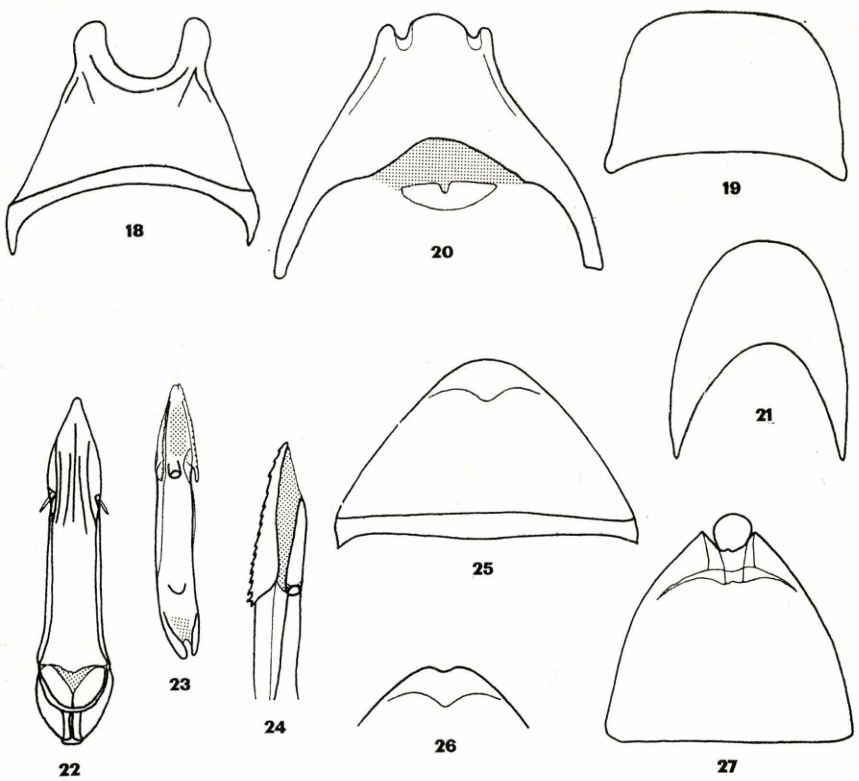
3. **Retocomus brittoni** sp. n. (Figs. 18—27; Map 1)

Diagnosis. The seventh abdominal sternite with long arms and without a central process (fig. 18) in the male and the fairly broad and prominent central and lateral apical processes of the seventh tergite (fig. 27) in the female should serve to distinguish this species from others in the same region: *alami* (figs. 1, 9), *basiri* (fig. 11), *constrictus* (figs. 39, 47), *crichtoni* (figs. 48, 55) and *lindrothi* (figs. 99, 106).

Holotype. Male (autor's no. 461), U. S. A., California, Riverside County, Idlewild, June 29, in the British Museum (N. H.). Vestiture dense. Head slightly narrower than pronotum at its widest part. Eleventh antennal segment nearly twice as long as tenth segment. Median pronotal sulcus weak, mostly concealed by white longitudinal pubescence. Surface sculpture mostly concealed. Hind tibiae neither appreciably dilated nor laterally compressed. Seventh abdominal sternite deeply emarginate; with long, slightly divergent lateral arms or processes, without a central process at apex; spinous at apex and below; subapically also depressed (fig. 18). Seventh tergite entire at apex (fig. 19). Eighth sternite with central process slightly longer than lateral processes; membranous at base (fig. 20). Eighth tergite entire at apex (fig. 21). Parameres (fig. 22) tapering at apex, with a pair of dorsolateral spines near apex, nearly equally long narrow central ridge and two wide lateral ridges present near apex. Median lobe as in figs. 23—24. Length: 10 mm.

Allotype. Female (author's no. 462), U. S. A., California, Riverside County, Idlewild, June 29, in the British Museum (N. H.). Differs from the holotype as follows. Eleventh antennal segment less than twice longer than tenth segment. Median pronotal sulcus not distinct. Seventh abdominal sternite entire at apex; with a weak, finely spinous dorsal lobe (fig. 25). Seventh tergite trilobed at apex; central process rounded, long; lateral processes pointed, short; with a thinly spinous ventral lobe (fig. 27). Length: 12 mm.

Paratypes. 37 designated, Records and Variation. U. S. A., California: Camp Baldy, San Bernardino County, 4, ♂♂, June 14 (A .T. McCLAY) (UC); 1 ♂, 1 ♀, June 14–20 (PM). City Creek Road*, 3 ♀♀, June 12 (A. T. McCLAY) (UC); 1 ♂ (HU); 1 ♂ (HNHM). Forest Home, San Bernardino County, 2 ♀♀, June 13 (E. VAN DYKE) (CAS). Idlewild, Riverside County, 1 ♂, 2 ♀♀, June 29 (E. VAN DYKE) (CAS). Laguna Mountains, San Diego County, 1 ♀, June 27 (HUB). Lytle Creek, San Bernardino County, 2 ♂♂, 4 ♀♀, June 7–8 (CAS). Pasadena, Los Angeles County, 1 ♂, June 18 (J. O. MARTIN) (CAS); 1 ♂, 1 ♀ (H. C. FALL) (HU); 1 ♀, June 9 (A. T. McCLAY) (UC); 1 ♀ (UL). Robert's Camp*, 1 ♂, May 5 (PhANS); 1 ♀, May 16 (CNHM). San Madre, Los Angeles County, 1 ♂, June (A. FENYES) (CAS). Snow Crest*, 1 ♀, June 26 (A. T. McCLAY) (UC). Tanbark Flat*, Los Angeles County, 1 ♂, June 26 (DEI). Waterman Canyon*, 2 ♂♂, 2 ♀♀, May 27 (J.O. MARTIN) (CAS).



Figs. 18–27. *Retocomus brittoni* sp n. 18: Seventh sternite of ♂, ventral view; 19: seventh tergite of ♂, dorsal view; 20: eighth sternite of ♂, ventral view; 21: eighth tergite of ♂, dorsal view; 22: tegmen of ♂, ventral view; 23: median lobe of ♂, ventral view; 24: apex of median lobe, lateral view; 25: seventh sternite of ♀, ventral view; 26: apex of seventh sternite of ♀, ventral view; 27: seventh tergite of ♀, dorsal view.

Intraspecific variation occurs in the following characters: vestiture sparse or dense; elytra rufous to black, with or without conspicuous maculations; legs pale to black; seventh abdominal sternite of female entire (fig. 25) or weakly emarginate at apex (fig. 26); and length varies from 7.5 – 10 mm among males and from 8 – 12 mm among females.

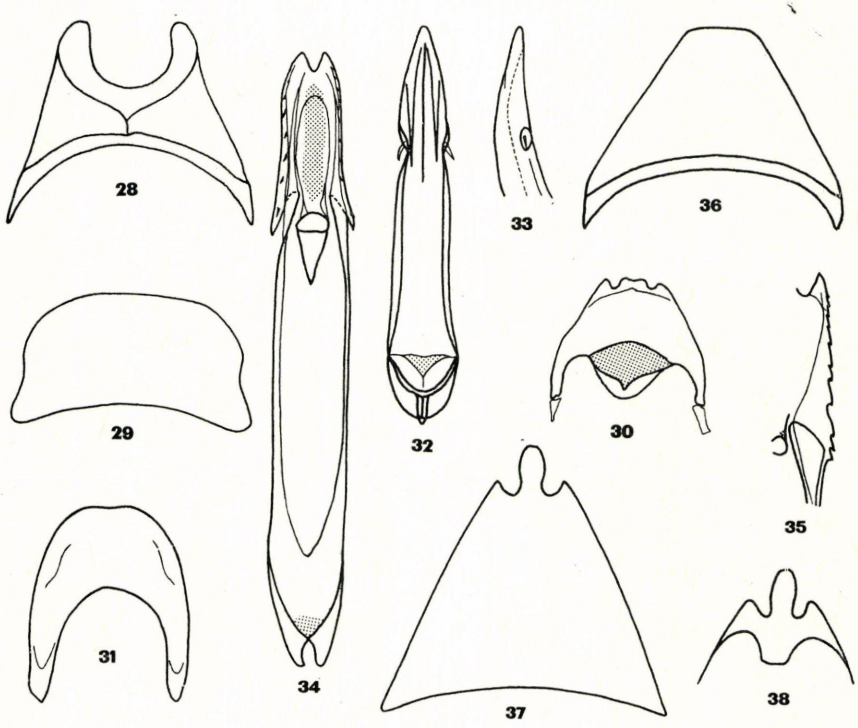
Seasonal distribution. The species has been collected from May 5 to June 29.

Remarks. I have much pleasure in naming this species in honour of Dr. EVERARD B. BRITTON, Department of Entomology, British Museum (N. H.) London in appreciation of his kindness towards me during my stay in his Department in 1962 – 1963.

4. **Retocomus colasi** sp. n. (Figs. 28 – 38; Plate 1; Map 1)

Diagnosis. The long, tapering apical end of the tegmen in front of the single pair of lateral spines (fig. 32) in the male and the very long central process of the seventh abdominal tergite in the female (figs. 37 – 38) should serve to distinguish this species from others in the same region: *crowsoni* (figs. 60, 65 – 66) and *duboisi* (figs. 71, 76).

Holotype. Male (author's no. 444), U. S. A., California, Tulare County, Kaweah, July 6, in the Museum National d'Histoire Naturelle, Paris (or Paris Museum). Colour of bases of femora and tibiae rufous. Vestiture sparse. Head nearly as wide as or only slightly narrower than pronotum at its widest part. Eleventh antennal seg-



Figs. 28 – 38. *Retocomus colasi* sp. n. 28: Seventh sternite of ♂, ventral view; 29: seventh tergite of ♂, dorsal view; 30: eighth sternite of ♂, ventral view; 31: eighth tergite of ♂, dorsal weiv; 32: tegmen of ♂, ventral view; 33: apex of tegmen of ♂, lateral view; 34: median lobe of ♂, ventral view; 35: portion of apex of median lobe of ♂, ventro-lateral view; 36: seventh sternite of ♀, ventral view; 37: seventh tergite of ♀, dorsal view; 38: apex of seventh tergite of ♀, ventral view

ment less than twice longer than tenth segment. Median pronotal sulcus distinct. Hind tibiae dilated and laterally compressed. Seventh abdominal sternite deeply emarginate; with long, nearly parallel lateral arms or processes, without a central process at apex; spinous at apex and below, subapically also depressed (fig. 28). Seventh tergite entire at apex (fig. 29). Eighth sternite with central process slightly longer than lateral processes, former also weakly emarginate (fig. 30). Eighth tergite nearly entire or only slightly, broadly emarginate at apex (fig. 31). Tegmen (figs. 32–33) tapering at apex; with a pair of dorsolateral spines near apex, parameres constricted below spines; a distinct, long median ridge and a pair of short but wider lateral ridges present near apex. Median lobe as in figs. 34–35. Length 7.5 mm.

Allotype. Female (author's no. 446), U. S. A., California, Fresno County, Dalton Creek, 4800 feet, May 6, in the Paris Museum. Differs from the holotype as follows. Vestiture dense. Seventh abdominal sternite entire at apex; with a very weak, finely spinous dorsal lobe (fig. 36). Seventh tergite with a very long, rather narrow central process and two short lateral processes; with a ventral, hook-like lobe (figs. 37–38). Length: 10 mm.

Paratypes. 21 designated. Records and Variation. U.S.A., California: Dalton Creek, Fresno County, 4800 feet, 1 ♂, 4 ♀♀ (H. Dietrich) (CU); 1 ♀ (HNHM). Kaweah, Tulare County, 1 ♀, July 6 (BM); 1 ♀ (CAS). Sequoia National Park, Tulare County, 2000–5000 feet, 3 ♀♀, May 20 (CAS); 7 ♀♀, May 2–28 (A. T. McClay) (UC); 1 ♂ (BM); 1 ♀ (DEI). Yosemite Valley, Mariposa County, 2 ♂♂, June 3–4 (E. Van Dyke) (CAS).

Intraspecific variation occurs in the following characters: vestiture sparse or dense: elytra with or without conspicuous maculation, brown to black; legs black to brown or rufous; eyes light brown to dark in colour; and length varies from 7.5–10 mm among males and from 7–11 mm among females.

Seasonal distribution. The species has been collected from May 2 to July 6.

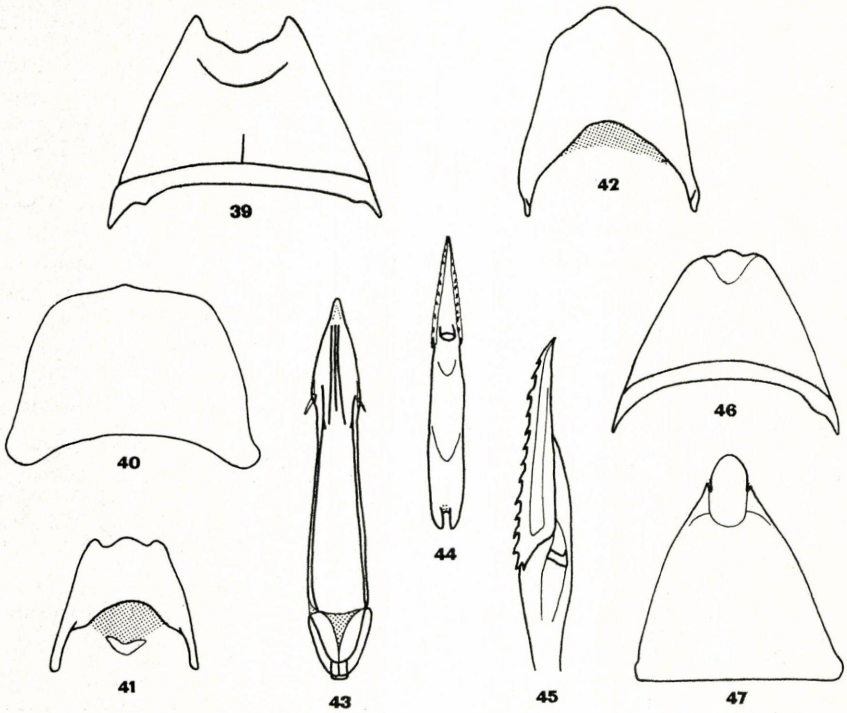
Remarks. I have much pleasure in naming this species in honour of my friend, Dr. Guy Colas, Laboratoire d'Entomologie, Muséum National d'Histoire Naturelle, Paris in appreciation of his assistance in my research studies.

5. **Retocomus constrictus** (LeConte) (Figs. 39–47; Map 1)

Eurygenius constrictus LeConte ([9] 1852, pp. 151–152); LeConte ([10] 1855, pp. 270-271); LeConte & Horn ([11] 1883, p. 411).
Retocomus constrictus, Casey ([7] 1895, p. 628).

Diagnosis. The short arms of the seventh abdominal sternite (fig. 39) in the male coupled with a long, narrow, tapering apical end of the tegmen (fig. 43) and the weakly trilobed seventh sternite in the female (fig. 46) should serve to distinguish this species from others in the same region: *brittoni* (figs. 18, 22, 25–26) and *crichtoni* (figs. 48, 52, 54).

Male (author's no. 470), U. S. A., California, San Diego County, Coronado, May 24 (F. E. Blaisdell), in the California Academy of Sciences (homotype of J. J. duBois). Vestiture dense. Ctinidia on middle trochanters not visible. Head wider than pronotum at its widest part. Eleventh antennal segment twice or slightly more longer than tenth segment. Median pronotal sulcus not distinct. Hind tibiae neither dilated nor laterally compressed. Seventh abdominal sternite emarginate; with short, pointed lateral processes or arms and without a central process at apex; apically sparsely spinous; subapically slightly depressed and less sclerotized (fig. 39). Seventh tergite with a weak, median process at apex (fig. 40). Eighth sternite with nearly equally long central and lateral processes, membranous near base (fig. 41). Eighth tergite entire, rather narrowed at apex (fig. 42). Tegmen (fig. 43) quite tapering



Figs. 39—47. *Retocomus constrictus* (LeConte) 39: Seventh sternite of ♂, ventral view; 40: seventh tergite of ♂, dorsal view; 41: eighth sternite of ♂, ventral view; 42: eighth tergite of ♂, dorsal view; 43: tegmen of ♂, ventral view; 44: median lobe of ♂, ventral view; 45: apex of median lobe of ♂, lateral view; 46: seventh sternite of ♀, ventral view; 47: seventh tergite of ♀, dorsal view.

reduced; in some males, seventh sternite and eighth tergite more rounded at apices than at apex; with a pair of lateral spines near apex; a weak, median, longitudinal ridge and a pair of longer and wider ridges present near apex. Median lobe as in (figs. 44—45). Length: 10 mm.

Female (authors' no. 472), U. S. A., California, San Diego County, Coronado, May 24 (F. E. Blaisdell) in the California Academy of Sciences. Differs from the male as follows. Eleventh antennal segment slightly less than twice longer than tenth segment. Wing with radial cell open (a case of individual variation. Seventh abdominal sternite weakly trilobed at apex; with a dorsal, finely spinous lobe near apex (fig. 46). Seventh tergite (may superficially appear entire and tapering but actually) with a large, prominent, ventrally finely spinous central lobe and two short, pointed lateral lobes at apex (fig. 47). Length: 10 mm.

Type locality: California, San Diego.

Records and Variation. U.S.A., California: Coronado, San Diego County, 2 ♂♂, May 24 (F. E. Blaisdell) (CAS); 1 ♂ (BM); 1 ♂ (PM). La Puerta, San Diego County, 1 ♀, July 11 (BM); 1 ♂ (HNHM). San Diego, San Diego County, 4 ♂♂, 1 ♀, May 24 (CAS); 1 ♂ (author's no. 471) (BM); 1 ♂ (PhANS); 1 ♀ (types no. 4869) (HU). San Diego County, 1 ♂ (F. E. Blaisdell) (CAS).

Intraspecific variation occurs in the following characters: vestiture sparse or dense; ctinidia on middle trochanters present or absent; elytral maculations well-developed or

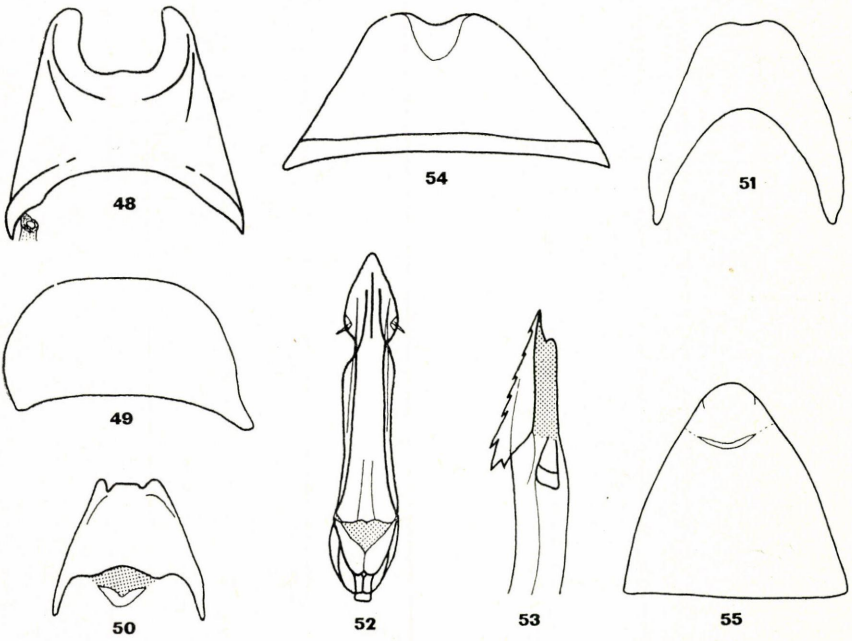
in figs. 39 and 42; and length varies from 6.5 – 10 mm among males and from 8 – 10 mm among females.

Seasonal distribution. The species has been collected from May 24 to July 11.

Remarks. The type is deposited in the Museum of Comparative Zoology, Harvard University (no. 4869, female, examined).

6. **Retocomus crichtoni** sp. n. (Figs. 48—55; Plate 1; Map 2)

Diagnosis. The deeply constricted tegmen behind the lateral spines (fig. 52) in the male and the entire, apically rounded seventh abdominal tergite (fig. 55) in the female should serve to distinguish this species from others in the same region: *alami* (figs. 5, 9), *basiri* (fig. 15), *brittoni* (figs. 22, 27), *crowsoni* (figs. 60, 65—66), *gratus* (figs. 82—83, 88—90), *lindrothi* (figs. 103, 106) and *riletti* (figs. 142, 146).



Figs. 48—55. *Retocomus crichtoni* sp. n. 48: Seventh sternite of ♂, ventral view; 49: seventh tergite of ♂, dorsal view; 50: eighth sternite of ♂ ventral view; 51: eighth tergite of ♂ dorsal view; 52: tegmen of ♂, ventral view; 53: apex of median lobe of ♂, lateral view; 54: seventh sternite of ♀, ventral view; 55: seventh tergite of ♀, dorsal view.

Holotype. Male (author's no. 478), U. S. A., California, Monterey County, Carmel, June 13 (L. S. Slevin), in the California Academy of Sciences. Vestiture sparse. Eleventh antennal segment less than twice as long as tenth segment. Median pronotal sulcus fine. Hind tibiae dilated and laterally compressed. Seventh abdominal sternite deeply emarginate; with long lateral processes or arms, and a weak central process at apex; apically thickly spinous, subapically depressed and thinly spinous ventrally (fig. 48). Seventh tergite entire at apex (fig. 49). Eighth sternite with central and lateral processes nearly equal or former only slightly shorter than latter: membranous near base (fig. 50). Eighth tergite broadly, weakly emarginate at apex

(fig. 51). Parameres (fig. 52) slightly tapering at apex, constricted subapically; with a pair of lateral spines near apex; a weak, median, longitudinal ridge and a pair of lateral ridges present near apex. Median lobe as in fig. 53. Length: 9 mm.

Allotype. Female (author's no. 479), U.S.A., California, Monterey County, Carmel, June 13 (L. S. SLEVIN), in the California Academy of Sciences. Differs from the holotype as follows. Elytra each with a faint reddish-brown longitudinal stripe. Seventh abdominal sternite emarginate at apex; with a dorsal, thinly spinous lobe near apex (fig. 54). Seventh tergite entire at apex; thinly spinous and hooked ventrally (fig. 55). Length; 10 mm.

Paratypes. 13 designated. Records and Variation. U.S.A., California: Carmel, Monterey County, 4 ♂♂, May 19 (L. S. SLEVIN, E. VAN DYKE) (CAS); 1 ♂, 1 ♀ (BM). Paraiso Hot Springs, Monterey County, 1 ♀, May 4 (BM). Pasadena, Los Angeles County, 1 ♂, May (A. FENYES) (CAS); 1 ♂ (author's no. 576), May 21 (PhANS); 1 ♀ (HUB). Pinnacles National Park, San Benito County, on oak 1 ♂, April 28 (PM). San Diego, San Diego County, 1 ♀, June 1 (HNHM).

Intraspecific variation occurs in the following characters: vestiture sparse or dense; elytra with or without conspicuous maculations, sometimes with longitudinal stripes of light brown and black colours, not due to colour of hair; legs black to brown or rufous eyes light brown to dark in colour, with or without small black spots; eighth sternite of male weakly emarginate or entire; seventh tergite of female sometimes with indications of three apical processes – all fused in one; and length varies from 5.5 – 9 mm among males and from 8.5-10.5 mm among females.

Seasonal distribution. The species has been collected from April 28 to June 13.

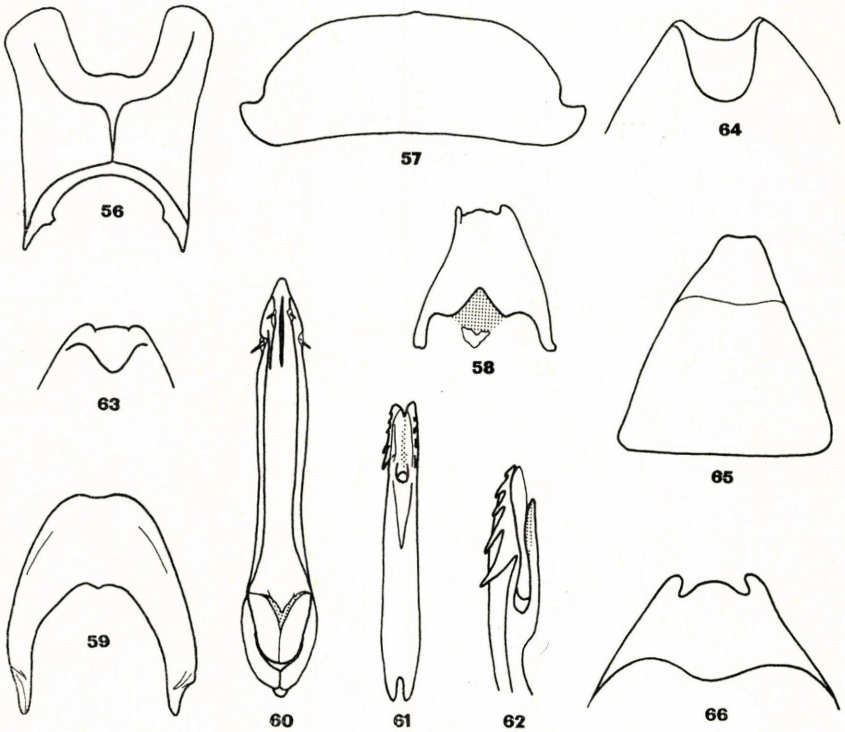
Remarks. I have much pleasure in naming this species in honour of Dr. M. IAN CRICHTON of this Department in appreciation of his kindness towards me.

7. **Retocomus crowsoni** sp. n. (Figs. 56—66; Plate 1, Map 3)

Diagnosis. The two pairs of spines on the tegmen (fig. 60) should serve to distinguish the males of this species from the males of all other species in the genus but females (see figs. 63—66) could only be certainly identified in association with males.

Holotype. Male (author's no. 457), U.S.A., California, Tulare County, Greenhorn Mountains, May 7 (E. VAN DYKE), in the California Academy of Sciences. Vestiture dense. Head nearly as wide as or only slightly narrower than pronotum at its widest part. Eleventh antennal segment slightly less than twice as long as tenth segment. Median pronotal sulcus fine, partly concealed by white row of hairs. Hind tibiae dilated and laterally compressed. Seventh abdominal sternite deeply emarginate; with long, broad (artificially divergent) processes or arms, and a weak central process at apex; with short and long, thick and thin spines at apex and below apex; subapically also depressed (fig. 56). Seventh tergite with a weak (scarcely distinct) median process at apex (fig. 57). Eighth sternite with nearly equally long central and lateral processes, former weakly trilobed; membranous near base (fig. 58). Eighth tergite weakly emarginate at apex (fig. 59). Parameres (fig. 60) slightly tapering at apex; with two pairs of spines near apex (the additional inner pair dorsal and small); with an outer curved, short lateral ridge and the usual longer central and (inner) lateral ridges. Median lobe as in figs. 61 – 62. Length: 8.5 mm.

Allotype. Female (author's no. 458), U.S.A., California, Tulare County, Greenhorn Mountains, May 7 (E. VAN DYKE), in the California Academy of Sciences. Differs from the holotype as follows. Seventh abdominal sternite weakly trilobed at apex; with a dorsal, thinly spinous lobe near apex (fig. 63). Seventh tergite truncate



Figs. 56—66. *Retocomus crowsoni* sp. n. 56: Seventh sternite of ♂, ventral view; 57: seventh tergite of ♂, dorsal view (pressed under a cover-slip); 58: eighth sternite of ♂, ventral view; 59: eighth tergit of ♂, dorsal view; 60: tegmen of ♂, ventral view; 61: median lobe of ♂, ventral view; 62: apex of median lobe of ♂, lateral view; 63: apex of seventh sternite of ♀, dorsal view; 64: apex of seventh sternite of ♀, dorsal view; 65: seventh tergite of ♀, dorsal view; 66: apex of seventh tergite of ♀, ven tral view

or very slightly emarginate at apex; with a ventral, finely spinous lobe (fig. 65). Length: 9 mm.

Paratypes. 50 designated. Records and Variation. U. S. A., California: Greenhorn Mount.) Tulare County, 3 ♂♂, 6 ♀ ♀, May 7—17 (E. Van Dyke) (CAS); 1 ♂, 4 ♀ ♀ (A. T. McClay. (UC); 1 ♂, 1 ♀ (BM); 1 ♀ (HUB); 1 ♂ (PM). Havilah*, 1 ♀, June 5 (E. Van Dyke) (CAS), Olancha, Inyo Countuy, 1 ♂, June 4 (C. L. Fox) (CAS). San Fernando, Los Angeles County 1 ♀, May 10 (HNHM); 1 ♂ (PhANS). Saugus, Los Angeles County, 1 ♀, June 2 (S. E. Flanders) (CAS). Nevada: Carson City, Ormsby County, 9 ♂♂, May 12 (MA). Gardnerville, Douglas County, 7 ♂♂, 1 ♀, May 12—28 (MA). Reno, "Sky Ranch", Washoe County, 5 ♂♂, 4 ♀ ♀, May 11 (MA). New Mexico: "Ft. Wingato"*, author's no. 583, 1 ♀, June 8 (BM). This doubtful record is not shown in the map (see remarks below).

Intraspecific variation occurs in the following characters: pronotum with or without a median row of white hairs over the sulcus; elytral maculations usually prominent, rarely reduced; elytra sometimes with a faint red or brown, central, longitudinal stripe, not due to pubescence; seventh sternite of female entire or emarginate; seventh tergite of female truncate (fig. 65), or entire, rounded, with indications of large central and two short lateral processes at apex (processes much weaker than in *constrictus*). In one female from California the central lobe is large as in *riletti* (see fig. 146) but is comparatively less prominent. The females from Nevada have emarginate seventh sternites (fig. 64) and trilobed seventh tergites (fig. 66). In the males from Nevada the apices of seventh and eighth tergites and the central

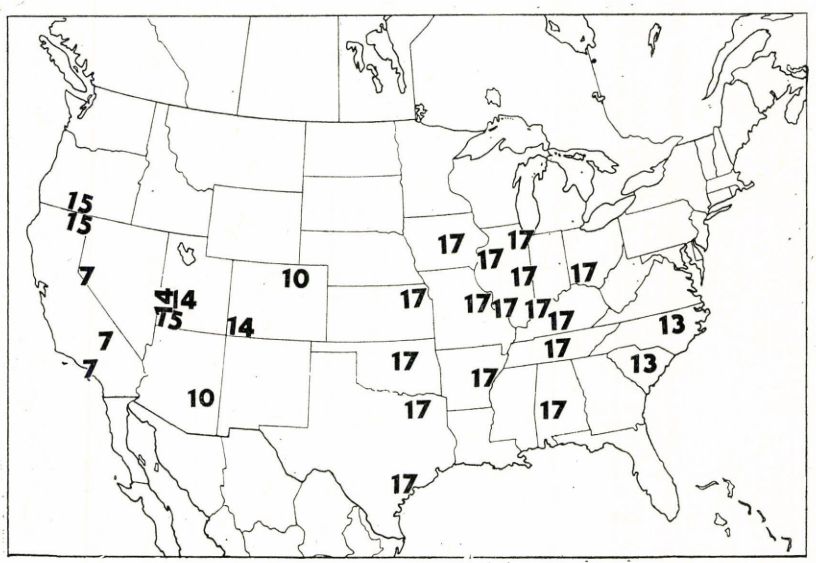
processes of eighth sternites are entire. Length varies from 6 – 9.5 mm among males and from 9 – 11.5 mm among females.

Seasonal distribution. The species has been collected from May 7 to June 8.

Remarks. I have much pleasure in naming this species in honour of Dr. ROY A. CROWSON University of Glasgow, Scotland in appreciation of his kindness towards me.

It is possible that the specimens from Nevada are specifically distinct from the Californian specimens. The females are quite distinct (see figs. 64, 66) but the males are rather similar. Future discovery of the immature stages may throw light on this issue.

The record of a female from New Mexico (not mapped) is interesting in view of the fact that the species is not recorded from Arizona. This discontinuity could be artificial and may reflect inadequate collecting from the area. However, there remains the possibility of an erroneous association of the locality label with the insect.

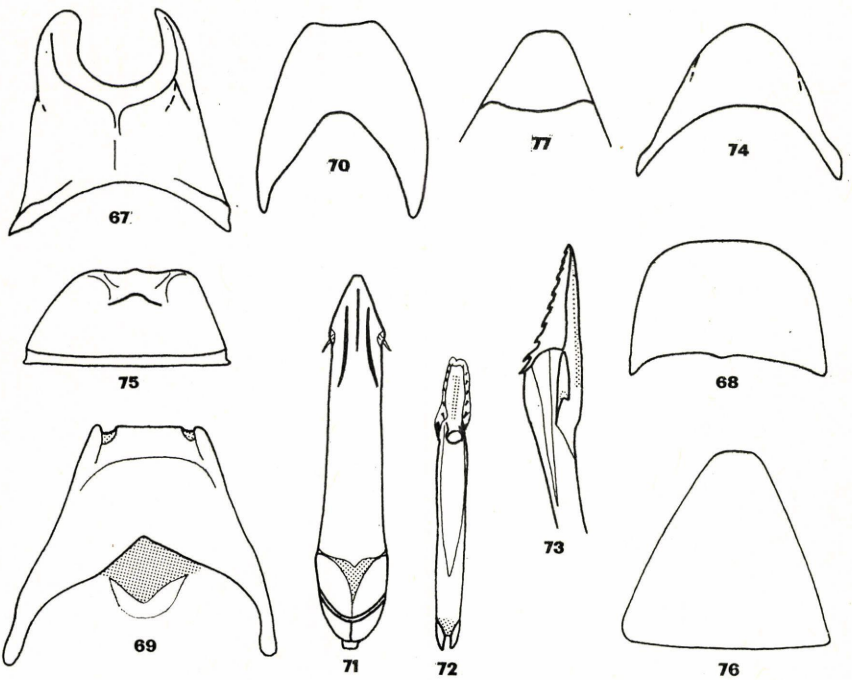


Map 3. Geographical distribution of: (7) *Retocomus crowsoni*, (10) *kaszabi*, (13) *murinus*, (14), *qadrii*, (15) *rehni* and (17) *wildii*.

8. **Retocomus duboisi** sp. n. (Figs. 67—77: Map 2)

Diagnosis. The extremely short apical end of the tegmen in front of the single pair of lateral spines (fig. 71) coupled with a large branched basal tooth on the cuticular blades of the median lobe as seen in a side view (fig. 73) in the male and the non-lobed seventh abdominal tergite (fig. 76) in the ♀ should serve to distinguish this species from others in the same region: *colasi* (figs. 32, 35, 37—38), *crowsoni* (figs. 60, 62, 65—66), *gratus* (figs. 82—83, 85, 88—90), *mockfordi* (figs. 111—112) and *rehni* (figs. 134, 136—137).

Holotype. Male (author's no. 449), U. S. A., California, Napa County, Napa, March 10 (J. J. DUBOIS), in the California Academy of Sciences. Vestiture sparse. Head nearly as wide as or slightly wider than pronotum at its widest part. Eleventh antennal segment slightly less than twice as long as tenth segment. Median pronotal sulcus not distinct (in a dried specimen). Elytron with a faint, median, pale streak. Hind tibiae dilated and laterally compressed. Seventh abdominal sternite deeply emarginate; with long lateral processes or arms, and a weak, scarcely distinct cen-



Figs. 67—77. *Retocomus duboisi* sp. n. 67: Seventh sternite of ♂, ventral view; 68: seventh tergite of ♂ dorsal view; 69: eighth sternite of ♂, ventral view; 70: eighth tergite of ♂, dorsal view; 71: tegmen of ♂, ventral view; 72: median lobe of ♂, ventral view; 73: apex of median lobe, lateral view; 74: seventh sternite of ♀, ventral view; 75: seventh sternite of ♀, dorsal view; 76: seventh tergite of ♀, dorsal view; 77: apex of seventh tergite of ♀, ventral view

tral process at apex; apically thickly spinous, subapically depressed and thinly spinous ventrally (fig. 67). Seventh tergite entire at apex (Fig. 68). Eighth sternite with nearly equally long central and lateral processes; membranous at base (fig. 69). Eighth tergite truncate and weakly emarginate at apex (fig. 70). Parameres (fig. 71) slightly tapering at apex; with a pair of lateral spines near apex; a weak, median longitudinal ridge and a pair of longer lateral ridges present near apex. Median lobe as in figs. 72—73. Length: 8 mm.

Allotype. Female (author's no. 450), U. S. A., California, Napa County, Napa, March 10 (J. J. DuBois), in the California Academy of Sciences. Differs from the holotype as follows. Seventh abdominal sternite entire at apex, with a weak central process visible in a dorsal view; a dorsal hook-loke process present (figs. 74—75). Seventh tergite truncate at apex; with a ventral, hook-like, thinly spinous lobe near apex (figs. 76—77). Length: 8.5 mm.

Paratypes. 86 designated. Records and Variation. U. S. A., California: Applegate, Placer County, 1 ♂, 4 ♀♀, May 4—5 (A. T. McClay) (UC); 1 ♂ (HNHM). Auburn, Placer County, 4 ♂♂, 1 ♀, April 6—15 (A. T. McClay) (UC); 1 ♂, 1 ♀ (PM). Bass Lake, Madera County, 1 ♂, April 24 (CDA); 1 ♂, 2 ♀♀, June 3 (A. J. Walz) (UI). "Bates Sta."*, 1 ♂, 1 ♀, April 8 (CDA). Big Bend Mountain, Butte County, 1 ♀, May 23 (H. H. Keifer) (CAS). Calaveras County, 3 ♂♂, 2 ♀♀, April—June (P. E. Blaisdell) (CAS). Calaveras Grove, Calaveras County, 1 ♂, April 17 (E. P. Van Duzee) (CAS). Chico, Butte County, 1 ♂, 2 ♀♀, April 11—18 (H. H. Keifer) (CAS). Clear Lake Oaks, Lake County, 1 ♀, May 20 (A. & J. G. Ed-

WARDS) (SJSC), Coarsegold, Madera County, May 12 (W. F. BARR) (UI). Eldrige, Sonoma County, 1 ♂, 2 ♀♀, April 14 (E. VAN DYKE) (CAS). Long Barn, Tuolumne County, 1 ♀, May 24 (E. P. VAN DUZEE) (Cas). Michigan Bar, Sacramento County, 1 ♀, April 24 (E. P. VAN DUZEE) (CAS). Mount St. Helena* (Napa County?), 1 ♂, 1 ♀, May 7 (HNHM); 1 ♂, April 20 (UI); 1 ♂ (CAS). Modoc County, 1 ♀, May 29 (F. W. NUNENMACHER) (CNHM). Napa, Napa County, 1 ♂, March 10 (J. J. DUBOIS) (AMNH); 1 ♂, 1 ♀ (BM); 1 ♂ (E. Van Dyke) (CAS); 1 ♂, 1 ♀ (CNHM); 1 ♀ (CU); 1 ♂ (HUB). Paradise, Butte County, 1 ♂, 1 ♀, April 18–24 (BM); 1 ♂, 1 ♀ (PM); 1 ♂ (PhANS); 1 ♀ (HNHM). Pope Valley, Napa County, 1 ♂, 1 ♀, April 1 (BM); 2 ♂♂ (CAS). Rumsey, Yolo County, 1 ♀, May 3 (B. E. WHITE) (CDA). Rutherford, Napa County, 1 ♀ (E. VAN DYKE) (CAS). Santa Susana, Ventura County, 1 ♀, June 2 (HUB); 1 ♀ (PM). Sequoia National Park, 2000–5000 feet, Tulare County, 1 ♂, 2 ♀♀, June 20 (E. VAN DYKE) (CAS); 1 ♂, May 30 (J. E. BLUM) (CDA); 6 ♂♂, 4 ♀♀, May 5–28 (A. T. MCCLAY, F. T. SCOTT) (UC); 1 ♀ (BM). Shasta County, 1 ♂, 3 ♀♀, May 4 (F. W. NUNENMACHER) (CNHM). Tuolumne County, 2 ♂♂, 2 ♀♀, May 13–14 (F. W. NUNENMACHER) (CNHM). Upper Lake, Lake County, 1 ♂, May 17 (HUB). Vacaville, Solano County, 1 ♂, 1 ♀, May 20 (H. S. HARRISON) (CDA). Visalia, Tulare County, 1 ♂, May, (BM); 1 ♂ (PM).

Intraspecific variation occurs in the following characters: vestiture sparse or dense; elytra with or without conspicuous maculations, usually with faint longitudinal stripes of light brown and black colours, not due to colour of hairs, clear in alcohol; legs black to brown or rufous; eyes light brown to dark in colour, with or without small black spots; median pronotal sulcus present or absent; and length varies from 6–9 mm among males and from 7–10 mm among females.

Seasonal distribution. The species has been collected from March 10 to June 20.

Remarks. I have much pleasure in naming this species in honour of Mr. JOHN J. DUBOIS who has collected these and other anthicid beetles.

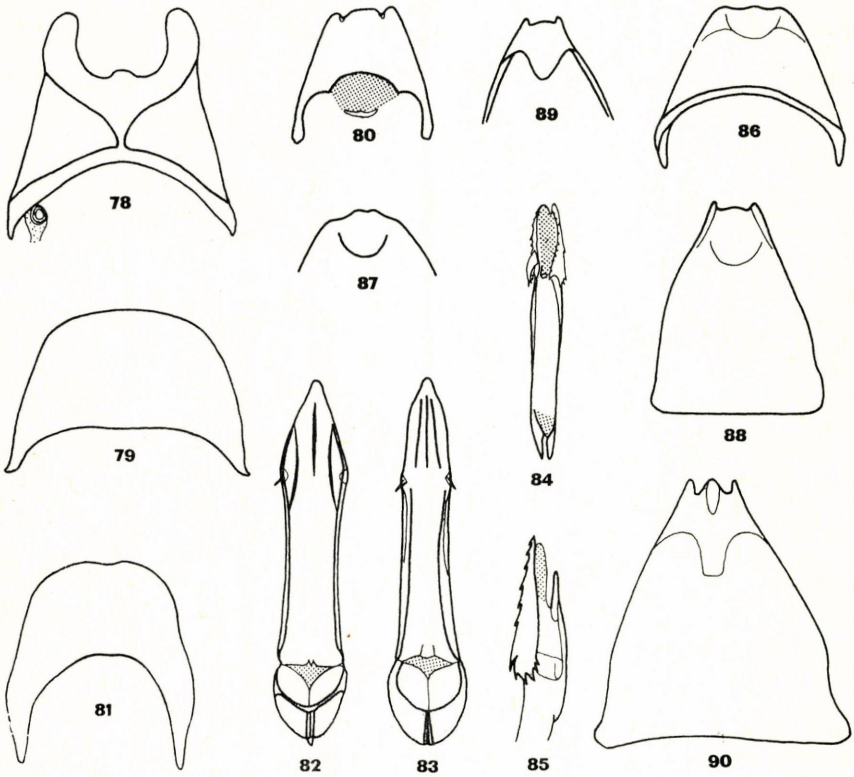
9. **Retocomus gratus** CASEY (Figs. 78–90; Map 1)

Retocomus gratus CASEY ([7] 1895, p. 629.)
Retocomus decorellus CASEY ([7] 1895, pp. 629–630) (syn. n.)

Diagnosis. The characteristic shapes of the apical ends of the tegmen (figs. 82–83) in the male coupled with the large numbers of teeth all along the bases of the cuticular blades of the median lobe as seen in a side view (fig. 85) and the weakly apically lobed seventh abdominal sternite (figs. 86–87) and tergites (figs. 89–90) in the female should serve to distinguish this species from others in the same region: *crichtoni* (figs. 52–55), *duboisi* (figs. 71, 73, 74–77) and *riletti* (figs. 142, 144–146).

Male (author's no. 453), U. S. A., California, Marin County, Fairfax, May 7 (E. VAN DYKE), in the California Academy of Sciences (homotype of J. J. DUBOIS). Vestiture sparse. Head nearly as wide as or only slightly narrower than pronotum at its widest part. Eleventh antennal segment nearly twice as long as tenth segment. Median pronotal sulcus fine. Two cross-veins between 1st A and 2d A_2, using Forbe's interpretation of beetle wing-venation, enclose an unusual rectangular cell in the specimen – a secondary feature. Hind tibiae dilated and laterally compressed. Seventh abdominal sternite deeply emarginate; with long lateral processes or arms, and a distinct central process at apex; apically thickly spinous, subapically depressed and thinly spinous ventrally (fig. 78). Seventh tergite entire at apex (fig. 79). Eighth sternite with nearly equally long central and lateral processes; membranous near base (fig. 80). Eighth tergite weakly emarginate at apex (fig. 81). Parameres (fig. 82) slightly tapering at apex: with a pair of lateral spines near apex; a weak, median, longitudinal ridge and a pair of longer ridges present near apex. Median lobe as in figs. 84–85. Length: 8.5 mm.

Female (author's no. 454), U.S.A., California, Marin County, Fairfax, April 21 (E. VAN DYKE), in the California Academy of Sciences (homotype of J. J. DUBOIS).



Figs. 78—90. *Retocomus gratus* CASEY 78: Seventh sternite of ♂, ventral view; 79: seventh tergite of ♂, dorsal view; 80: eighth sternite of ♂, ventral view; 81: eighth tergite of ♂, dorsal view; 82: tegmen of ♂, ventral view; 83: tegmen of ♂, ventral view; 84: median lobe of ♂, ventral view; 85: apex of median lobe of ♂, lateral view; 86: seventh sternite of ♂, ventral view; 87: apex of seventh sternite of ♀, dorsal view; 88: seventh tergite of ♀, dorsal view; 89: apex of seventh tergite of ♀, ventral view; 90: seventh tergite of ♀, dorsal view.

Differs from the male as follows. Seventh abdominal sternite almost entire or very weakly trilobed at apex; with a dorsal, thinly spinous lobe near apex (fig. 86). Seventh tergite with lateral lobes narrow, short but distinct; without a central lobe; with a ventral, hook-like, thinly spinous lobe near apex (figs. 88—89).

Type locality: of *gratus*: California, Santa Cruz County; of *decorellus:* California, Marin County.

Records and Variation. U. S. A., California: State label only, 1 ♂, 1 ♀ (AMNH); Alameda, County, 3 ♂♂, 1 ♀, May 14 (CNHM); Alma, Santa Clara County, 1 ♂ (E. VAN DYKE) (CAS); Bradley, Monterey County, 1 ♀, April 23 (E. P. VAN DUZEE), (CAS); Cazadero*, 1 ♂, April 12 (E. P. VAN DUZEE) (CAS); 7 miles west of Coalinga, Fresno County, 2 ♂♂, March 20 (R. G. DAHL) (CDA); Comptche, Mendocino County, 1 ♂, 1 ♀, April 7 (CAS); Contra Costa County, 1 ♂, 1 ♀, April 4 – May 23 (CNHM); Cypress Ridge, Marin County, 3 ♂♂, 2 ♀♀, April 17 – 19 (J. O. MARTIN, E. VAN DYKE) (CAS); 2 ♂♂, 1 ♀, June 2 (A. & J. G. EDWARDS, (SJSC); Eldridge*, 2 ♂♂, 2 ♀♀, May 12 – 19 (E. VAN DYKE) (CAS); Fairfax, Marin County, 6 ♂♂, 5 ♀♀, May 10 – 20 (F. E. BLAISDELL, E. VAN DYKE) (CAS); Laytonville, Mendicono County 1 ♀, May 8 (A. T. MCCLAY) (UC); Marin County, 1 ♂, April 28 (R. G. DAHL) (CDA); 1 ♂ (E. VAN DYKE) (CAS); Mendicono County, 1 ♂, May 30 (F. E. NUNENMACHER) (CNHM);

1 mile north of Midway, Alameda County, on *Astragalus*, 2 ♂♂, 8 ♀♀, April 9 (UI); Mill Valey, Marin County, 1 ♀, June (A. FENYES) (CAS); Mount Diablo, Contra Costa County, 1 ♀, April 29 (E. VAN DYKE) (CAS); 1 ♀ (author's no. 563) (CU); Mount Tamalpais*, 3 ♀♀, May 6 – June (F. E. BLAISDELL, E. VAN DYKE) (CAS); Muir Woods, Marin County, 1 ♀, May 12 (F. E. BLAISDELL) (CAS); Napa County, 1 ♂ (CAS); Niles Canyon, Alameda County, 1 ♀, May 14 (E. VAN DYKE) (CAS); Oakland Hills, Alameda County, 1 ♂, June 12 (R. G. DAHL) (CDA); Occidental, Sonoma County, 4 ♂♂, 4 ♀♀, April 27 – 29 (A. T. MCCLAY) (UC); Phoenix Lake, Marin County, 1 ♀, April 3 (H. H. KEIFER) (CAS); Ross, Marin County, 1 ♂, April 28 (E. P. VAN DUZEE) (CAS); San Jose, Santa Clara County, 6 ♂♂, 5 ♀♀, April 29 (A. T. MCCLAY) (UC); 1 ♂ (author's no. 577) April 2 (BM); Santa Clara County, 2 ♂♂, May 4 (J. E. HENRY) (UI); Santa Cruz Mountains, Santa Clara County, 1 ♀ (KOEBELE) (CAS); Santa Rosa, Sonoma County, 1 ♀, April 25 (A. T. MCCLAY) (UC); Silver Creek Area, Santa Clara County, 2 ♀♀, April 21 (A. & J. G. EDWARDS) (SJSC); Sonoma County, 2 ♂♂, May 12 (A. FENYES, E. VAN DYKE) (CAS); Stone Canyon, Monterey County, 2 ♂♂ April 21 (E. P. VAN DUZEE) (CAS); Sylvania*, 2 ♂♂, 1 ♀ (HU); Woodacre*, 1 ♂, April 19 (HNHM); Yorkville, Mendicono County, 3 ♂♂, 1 ♀, May 17 (E. P. VAN DUZEE) (CAS).

Intraspecific variation occurs in the following characters: vestiture sparse or dense; elytral maculations well-developed or reduced; a weak median pronotal sulcus present or absent; a central process on the seventh abdominal sternite of male prominent or reduced; parameres wide and shallow near apex (fig. 82) or narrow and deep (fig. 83), former condition probably artificially produced due to pressure; seventh sternite of female with (fig. 87) or without (fig. 86) a prominent central process; seventh tergite of female with narrow lateral process (figs. 88 – 89), rarely a central process also promient (fig. 90); and length varies from 7 – 9 mm among males and from 7.5 – 12 mm among females.

Bionomics. The specimens from Midway in Almeda County were taken on *Astragalus*.

Seasonal distribution. The species has been collected April 2 to June 12.

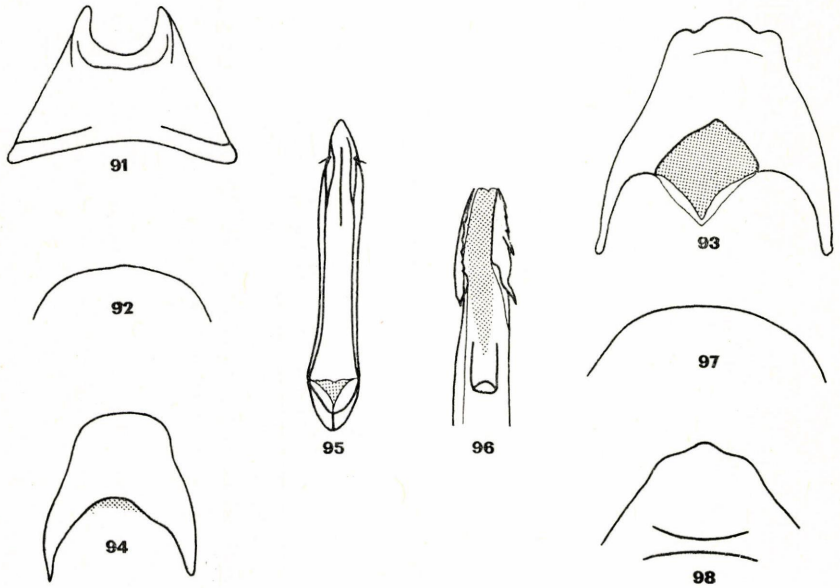
Remarks. My opinion of the proposed synonymy is partly based on CASEY's statement, „the fifth (=seventh abdominal) segment is nearly similar" (CASEY, 1895, p. 630) and partly on the basis of the specimens compared with the types (homotypes) of the two nominal species (*gratus* and *decorellus*) by Mr. JOHN J. DUBOIS wich I have examined.

10. **Retocomus kaszabi** sp. n. (Figs. 91 – 98; Map 3)

Diagnosis. The short apex of the tegmen infront of the lateral spines (fig. 95) in the male coupled with a large tooth at the bases of the cuticular blades of the median lobe (fig. 96) and the entire seventh abdominal sternite (fig. 97) in the female should serve to distinguish this species from the other *(qadrii*, figs. 126, 129 – 130) in the same region.

Holotype. Male (author's no. 581), U.S.A., Arizona, in the Hungarian Natural History Museum, Budapest. Vestiture dense. Eleventh antennal segment less than twice as long as tenth segment. Median pronotal sulcus not distinct. Hind tibiae neither appreciably dilated nor laterally compressed. Seventh abdominal sternite deeply emarginate; with long, narrow lateral arms or processes, without a central process at apex; sparsely, finely spinous at apex, subapically slightly depressed and less sclerotized (fig. 91). Seventh tergite almost entire (fig. 92). Eighth sternite with central process slightly longer than lateral processes; membranous near base (fig. 93). Eighth tergite entire at apex (fig. 94). Parameres (fig. 95) slightly tapering at apex: with a pair of dorsolateral spines near apex; a narrow, median, longitudinal ridge and a pair of narrow, lateral ridges present near apex. Median lobe in fig. 96. Length: 7 mm.

Allotype. Female (author's no. 469), U S.A – Arizona, Gila County, Globe, May 2, in the Hungarian Natural History Museum. Differs from the holotype as follows. Seventh abdominal sternite entire at apex; with a very weak, finely spinous dorsal lobe (fig. 97). Seventh tergite weakly trilobed at apex; dorsally depressed near apex; with a finely spinous, ventral, hook-like lobe (fig. 98). Length 8 mm.



Figs. 91—98. *Retocomus kaszabi* sp. n. 91: Seventh sternite of ♂, ventral view; 92: apex of seventh tergite of ♂, dorsal view; 93: eighth sternite of ♂, ventral view; 94: eighth tergite of ♂, dorsal view; 95: tegmen of ♂, ventral view; 96: apex of median lobe of ♂, ventral view; 97: apex of seventh sternite of ♀, ventral view; 98: apex of seventh tergite of ♀, dorsal view.

Paratypes. 4 designated. Records and Variation. U. S. A., Arizona: State label only. 1 ♂ (PM); 1 ♀ (BM). Globe, Gila County, 1 ♂ (author's no. 467), June (D. K. Duncan) (CAS). Colorado: Fort Collins, Larimer County, 1 ♂ (author's no. 580) (BM).

Intraspecific variation occurs in the following characters: vestiture sparse or dense; elytra and legs black brown; median pronotal sulcus distinct or not; and length varies from 7 – 8 mm among males and from 8 – 9 mm among females.

Seasonal distribution. The species has been collected from May to June.

Remarks. I have much pleasure in naming this species in honour of Dr. Zoltán Kaszab, Director of Zoological Department of the Hungarian Natural History Museum, Budapest, in appreciation of his kindness towards me.

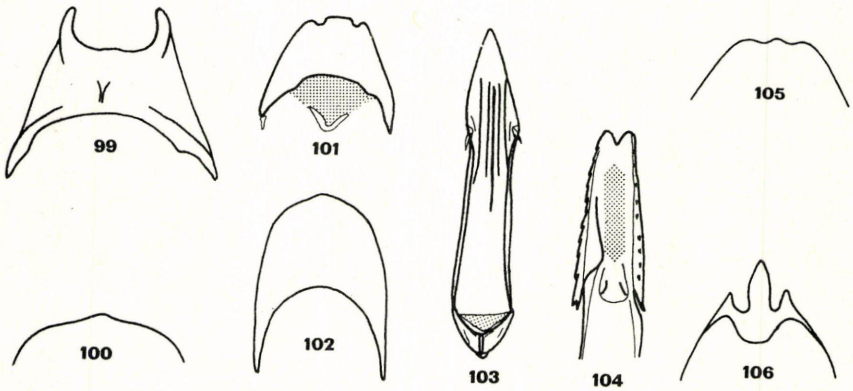
11. **Retocomus lindrothi** sp. n. (Figs. 99—106; Map 2)

Diagnosis. The long narrow arms of the seventh abdominal sternite (fig. 99) in the male and the long, narrow, central process of the seventh tergite (fig. 106) in the female should serve to distinguish this species from others in the same region: *alami* (figs. 1, 9) *brittoni* (figs. 18, 27), *crichtoni* (figs. 48, 55) and *crowsoni* (figs. 56, 65—66).

Holotype. Male (author's no. 572), U.S. A., California, Los Angeles County, San Gabriel Canyon, April 21, at the University of Lund, Sweden. Vestiture dense; metasternum not spinous (as in some *alami*). Head nearly equal to or very slightly narrower than pronotum at its widest part. (Distal antennal segment lost). Median pronotal sulcus not distinct; more or less covered by white, longitudinal row of pubescence. Surface sculpture mostly covered by pubescence. Hind tibiae neither dilated nor laterally compressed. Seventh abdominal sternite deeply emarginate; with long, narrow, lateral arms or processes, without a prominent central process at apex; sparsely, finely spi-

nous at apex; subapically slightly depressed and less sclerotized (fig. 99). Seventh tergite with a very weak central process at apex (fig. 100). Eighth sternite with central process entire, slightly longer and much wider than lateral process; membranous at base (fig. 101). Eighth tergite with a weak, median process at apex (fig. 102). Tegmen (fig. 103) as in *alami* (see fig. 5) but sligtly longer, head end more tapering but less narrowed than in *constrictus* (see fig. 43), and with a longer central ridge. Median lobe as in *colasi* (see fig. 34) but slightly shorter (fig. 104). Length; 6.5 mm.

Allotype. Female (author's no. 573), U. S. A., California, Los Angeles County, San Gabriel, April 21 at the University of Lund. Differs from the holotype as follows. Seventh abdominal sternite weakly trilobed at apex; with a dorsal, finely spinous lobe



Figs. 99—106. *Retocomus lindrothi* sp. n. 99: Seventh sternite of ♂, ventral view; 100: apex of seventh tergite of ♂, dorsal view; 101: eighth sternite of ♂ ventral view; 102: eighth tergite of ♂, dorsal view; 103: tegmen of ♂, ventral view; 104: apex of median lobe of ♂, ventral view; 105: apex of seventh sternite of ♀, ventral view; 106: apex of seventh tergite of ♀, ventral view

at apex (fig. 105). Seventh tergite with a very long, narrow, apically pointed central process and two short, lateral processes; with a ventral, hook-like lobe; shape as in *colasi* (see fig. 37) but with central process narrower and not blunt at apex (fig. 106). Length: 8 mm. The eleventh antennal segment is only slightly longer than the tenth segment.

Paratype. 1 female, from the same locality, now with head, pronotum and abdomen missing (HNHM).

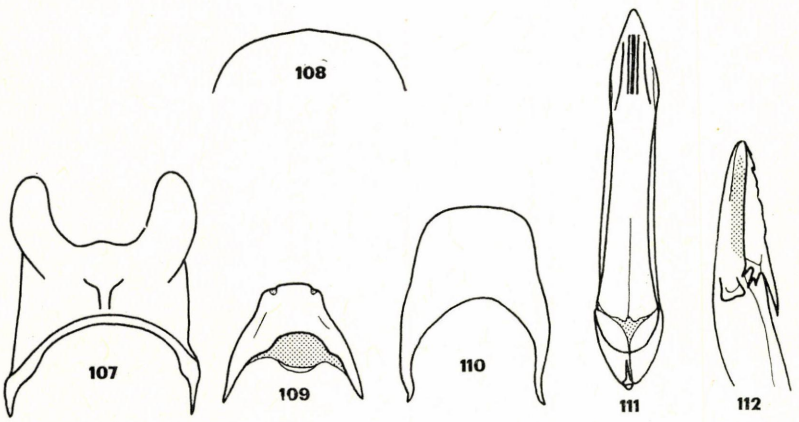
Remarks. I have much pleasure in naming this species in honour of Dr. CARL H. LINDROTH, Department of Entomology, Zoological Institute, The University, Lund, Sweden in appreciation of his kindness towards me.

12. **Retocomus mockfordi** sp. n. (Figs. 107—112; Map 1)

Diagnosis. The complete absence of spines on the tegmen (fig. 111) in the male coupled with a basal, long tooth and an adjacent short, branched tooth on the cuticular blades of the median lobe (fig. 112) should serve to distinguish this species from all others in the genus.

Holotype. Male (author's no. 587), U.S.A., California, Placer County, Dutch Flat, in the Hungarian Natural History Museum. Vestiture moderately dense. Head nearly as wide as pronotum at its widest part. Eleventh antennal segment slightly

less than twice as long as tenth segment. Median pronotal sulcus not distinct, more or less covered by white, longitudinal row of pubescence. Hind tibiae dilated and laterally compressed. Seventh abdominal sternite deeply emarginate; with long, broad, lateral processes or arms, and a distinct central process at apex; apically thickly spinous, subapically depressed and finely spinous ventrally (fig. 107). Seventh tergite nearly entire at apex; (fig. 108). Eighth sternite with very short, apical processes; central process only slightly longer than lateral processes: membranous near base (fig. 109). Eighth tergite entire at apex (fig. 110). Parameres (fig. 111) tapering at apex; smooth, without spines; short ridges present near apex; a long, median sulcus present at base. Median lobe as in fig. 112. Length: 8.5 mm.



Figs. 107—112. *Retocomus mockfordi* sp. n. 107; Seventh sternite of ♂, ventral view; 108: seventh tergite of ♂, dorsal view; 109: eighth sternite of ♂, ventral view; 110: eighth tergite of ♂, dorsal view; 111: tegmen of ♂, ventral view; 112: apex of median lobe, lateral view.

Remarks. I have much pleasure in naming this species in honour of DR. EDWARD L. MOCKFORD, Department of Biological Sciences, Illinois State University, U. S. A., in appreciation of his kindness towards me during my stay there.

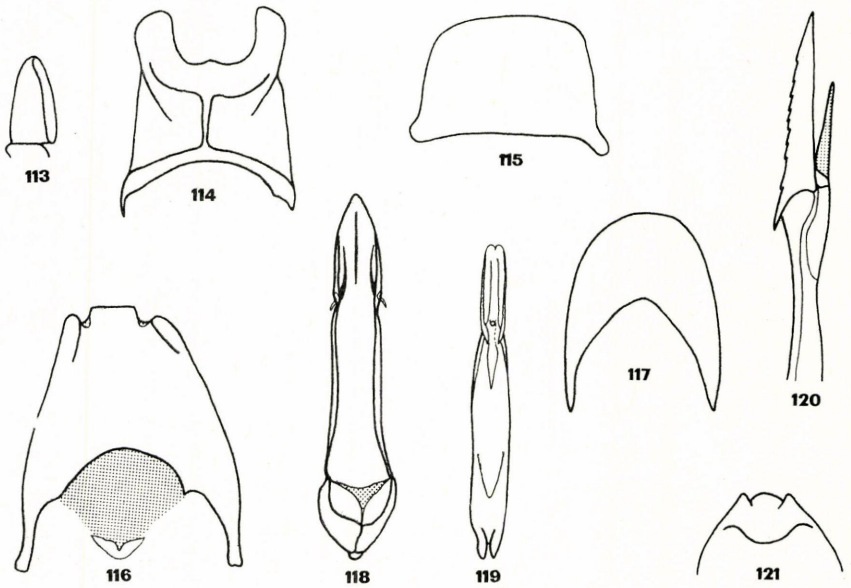
13. **Retocomus murinus** (HALDEMAN) (Figs. 113—121; Map 3)

Ichthidion murinum HALDEMAN ([8] 1843, p. 304).
Eurygenius murino, LECONTE ([9] 1852, p. 152).
Eurygenius murinus, LECONTE ([10] 1855, pp. 270—271); LECONTE & HORN ([11] 1883, p. 411).
Retocomus murinus, CASEY ([7] 1895, p. 628).

Diagnosis. The species can be separated from all others in the genus except *wildii* by its present geographical distribution in the eastern States of U.S. A. It should be easily distinguished from *wildii* by the shape of the clypeus or by the lack of the stripes on the elytra.

Male (author'no. 468), U. S. A., South Carolina, Paris Mountain*, May 9, in the Hungarian Natural History Museum. Vestiture sparse. Eleventh antennal segment nearly twice as long as tenth segment. Median pronotal sulcus fine. Hind tibiae dilated and laterally compressed. Seventh abdominal sternite deeply emarginate; with long lateral processes or arms, and a distinct central process at apex; apically thickly

spinous, subapically depressed and thinly spinous ventrally (fig. 114). Seventh tergite entire at apex (fig. 115). Eighth sternite with a long, truncate, central process, and a pair of short, lateral processes at apex; membranous near base (fig. 116). Eighth tergite entire at apex (fig. 117). Parameres (fig. 118) slightly tapering at apex; with a pair of lateral spines near apex; a weak median, longitudinal ridge and a pair of shorter ridges present near apex. Median lobe as in figures 119—120. Measurements in mm. Total length 8.5. Antennal segment I—XI: 0.38, 0.21, 0.21, 0.23, 0.23, 0.21, 0.20, 0.21, 0.20, 0.20, and 0.42, respectively. Maxillary palp's segment I—IV: 0.09, 0.22, 0.19, and 0.26 respectively. Head: width across eyes. 0.96; dorsal interocular distance 0.33. Pronotum: length 1.15; width at apex 0.60; maximum width 0,96; width at base 0,73.



Figs. 113—121. *Retocomus murinus* (HALDEMAN) 113: Apical segment of maxillary palp; 114: seventh sternite of ♂, ventral view; 115: seventh tergite of ♂, dorsal view; 116: eighth sternite of ♂, ventral view 117: eighth tergite of ♂, dorsal view; 118: tegmen of ♂, ventral view; 119: median lobe of ♂, ventral view; 120: apex of median lobe of ♂, lateral view; 121: apex of seventh tergite of ♀, dorsal view.

Elytron: length 6; maximum width 0.88. Front tarsus, segment I—V: 0.42, 0.23, 0.17, 0.07, and 0.45 respectively. Middle tarsus, segments I—V; 0.56, 0.23, 0.21, 0.08 and 0.45 respectively. Hind tarsus, segments I—IV: 0.64, 0.23, 0.09, and 0.45 respectively. Hind tibial spur 0.12.

Female, U. S. A., North Carolina, Wake County, Raleigh, early May (F. SHERMAN); in the California Academy of Sciences. Differs from the male as follows. Apical segment of maxillary palp less elongated. Seventh abdominal sternite entire at apex. Seventh tergite with a wide central and two narrow lateral processes at apex, with thin spines ventrally (fig. 121) Measurements in mm. Total length 7.5. Antennal segments I—XI: 0.33, 0.18, 0.19, 0.20, 0.20, 0.20, 0.20, 0.23, 0.22, 0.21 and 0.37 respectively. Maxillary palp segments I—IV: 0.07, 0.20, 0.18, and 0.25 respectively. Head: width across eyes 0.90; dorsal interocular distance 0.33. Pronotum: length 1.07; width at

apex 0.52: maximum width 0.94; width at base 0.90. Elytron: length 5.5; maximum width 0.80. Front tarsus, segments I—V: 0.30, 0.22, 0.18, 0.09, and 0.42 respectively. Middle tarsus, segments I—V: 0.43, 0.19, 0.14, 0.07, and 0.42 respectively. Hind tarsus, segments I—IV: 0.48, 0.20, 0.07, and 0.42 respectively. Hind tibial spur 0.15.

Type locality was not mentioned by HALDEMAN and his specimen is not traceable. I propose Raleigh, North Carolina as the new type locality and the above female as the neotype.

Records and Variation. U. S. A., North Carolina, Raleigh, Wake County, 1 ♂, early May (F. SHERMAN) (CAS). State (N. C.) label only, 1 ♀ (HU).

Intraspecific variation occurs in the following characters: colour of elytra and legs brownish black to light brown; vestiture sparse or dense; maculations on elytra well-developed or reduced; and length varies from 7.5—11 mm.

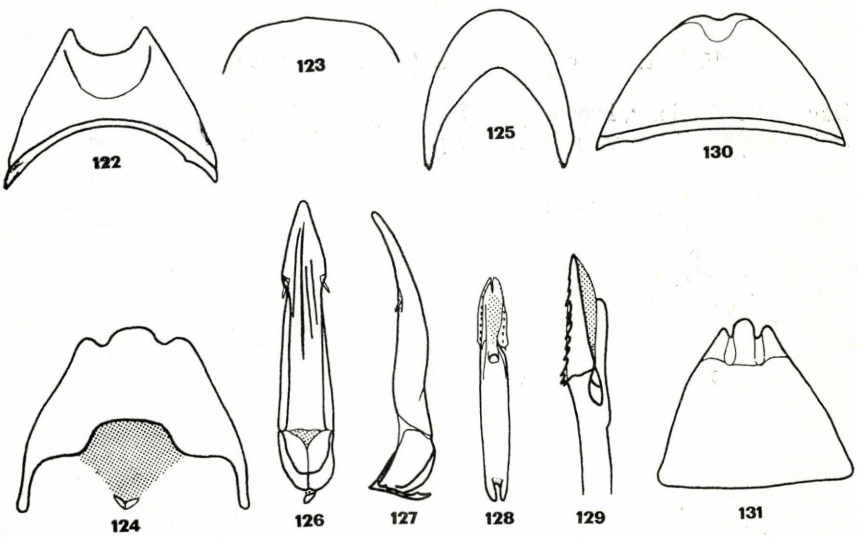
Seasonal distribution. The species has been collected in May.

Remarks. According to Mr. JOHN. J. DUBOIS, "This species has been found from North Carolina in the north, southwest through the south Atlantic States and as far as Oklahoma" (unpublished information).

14. **Retocomus qadrii** sp. n. (Figs. 122—131; Map 3)

Diagnosis. The short arms of the seventh abdominal sternite (fig. 122) in the male coupled with a long, gradually narrowed apex of the tegmen infront of the lateral spines (figs. 126—127) and the prominent three apical lobes of the seventh tergite (fig. 131) in the female should serve to distinguish this species from others in same region: *kaszabi* (figs. 91, 95, 98) and *rehni* (figs 132, 134, 136—137).

Holotype. Male (author's no. 459), U. S. A., Utah, Washington County, St. George, May 28, in the British Museum (N. H). Vestiture dense. Eleventh antennal segment slightly less than twice as long as tenth segment. Median pronotal sulcus distinct



Figs. 122—131. *Retocomus qadrii* sp. n. 122: Seventh sternite of ♂, ventral view; 123: apex of seventh tergite of ♂, dorsal view; 124: eighth sternite of ♂, ventral view; 125: eighth tergite of ♂, dorsal view; 126: tegmen of ♂, ventral view; 127: tegmen of ♂, lateral view; 128: median lobe of ♂, ventral view; 129: apex of median lobe of ♂, lateral view; 130: seventh sternite of ♀, ventral view; 131: seventh tergite of ♀, dorsal view.

near apex, covered by white, longitudinal row of pubescence near base. Hind tibiae neither appreciably dilated nor laterally compressed. Seventh abdominal sternite emarginate; with short, rather pointed lateral arms or processes, without a central process at apex; sparsely thinly spinous at apex and much less so below; subapically slightly depressed (fig. 122). Seventh tergite almost entire at apex (fig. 123). Eighth sternite with central process very slightly longer than lateral processes; membranous near base (fig. 124). Eighth tergite entire at apex (fig. 125). Parameres (figs. 126–127) tapering at apex; with a pair of dorsolateral spines near apex; a long, median, longitudinal ridge, and a pair of short but wide lateral ridges present near apex. Median lobe as in figs. 128–129. Length: 7 mm.

Allotype. Female (author's no. 460), U.S.A., Utah, Washington County, St. George, May 28, in the British Museum (N. H). Differs from the holotype as follows. Median pronotal sulcus not distinct. Seventh abdominal sternite emarginate at apex; with a weak, finely spinous dorsal lobe (fig. 130). Seventh tergite trilobed at apex; central process slightly longer than lateral processes; with a thinly spinous ventral hook-like lobe (fig. 131). Length: 8 mm.

Paratypes. 17 designated. Records and Variation. U.S.A., Colorado: Cortez, Montezuma County, 1 ♀ (E. VAN DYKE) (CAS); 1 ♂ (PhANS). Utah: Beaver Creek, Beaver County, 1 ♂, 1 ♀, May 30 (CU); 1 ♂ (DEI); 1 ♂, 1 ♀ (PM). Mount Carmel, Kane County, 2 ♂♂, 4 ♀♀, May 30 (E. VAN DYKE) (CAS). North Spring, Iron County, 2 ♂♂, 1 ♀ June 10 (HNHM).

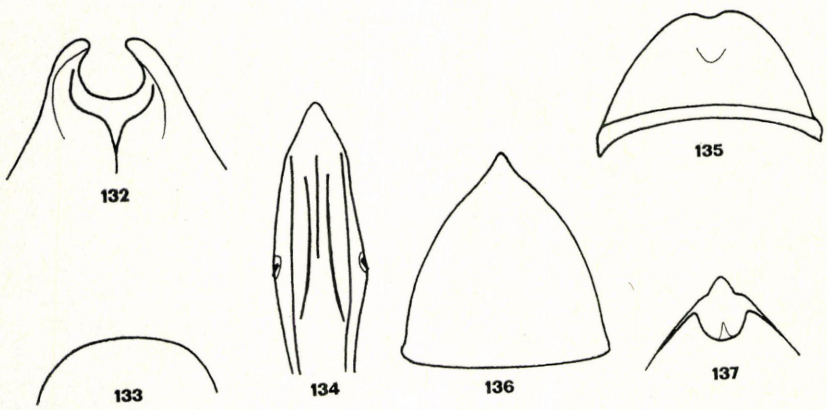
Intraspecific variation occurs in the following characters: vestiture sparse or dense; elytra with or without conspicuous maculations; elytra and legs dark brown to pale; and length varies from 6–8 mm among males and from 6–10 mm among females.

Seasonal distribution. The species has been collected from April 10 to June 10.

Remarks. I have much pleasure in naming this species in honour of Professor M. AFZAL H. QADRI, Head of the Department of Zoology, University of Karachi, Pakistan in appreciation of his kindness towards me during my stay and training in his Department in 1956–1957.

15. **Retocomus rehni** sp. n. (Figs. 132–137; Map 3)

Diagnosis. The long, broad apex of the tegmen infront of the lateral spines (fig. 134) in the male and the apically tapering seventh abdominal tergite (figs. 136–137)



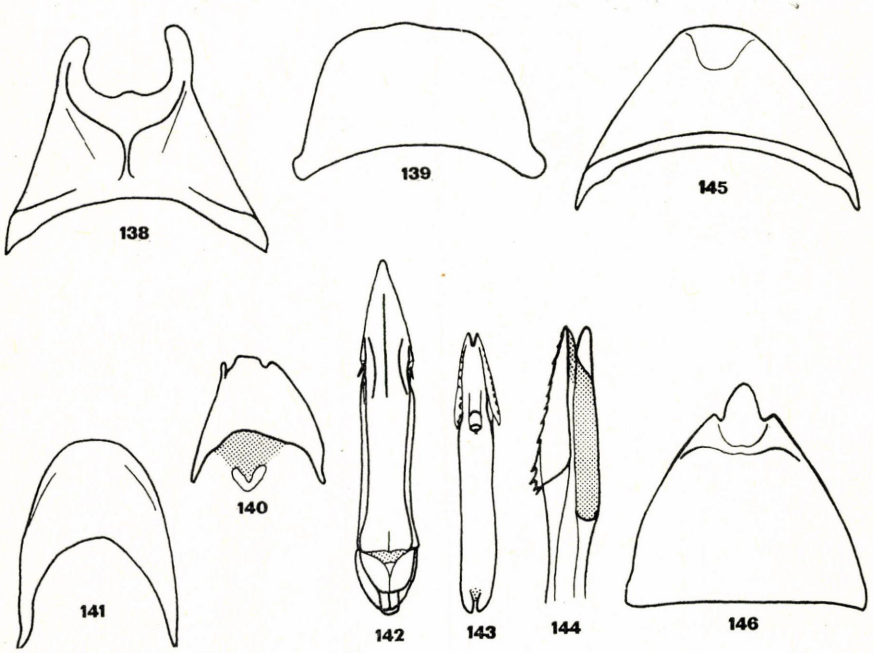
Figs. 132–137. *Retocomus rehni*. sp. n. 132: Apex of seventh sternite of ♂, ventral view; 133: apex of seventh tergite of ♂, dorsal view; 134: apex of tegmen of ♂, ventral view; 135: seventh sternite of ♀, ventral view; 136: seventh tergite of ♀, dorsal view; 137: apex of sevent tergite of ♀, ventral view

in the female should serve to distinguish this species from others in the same region: *duboisi* (figs. 71, 76) and *qadrii* (figs. 126–127, 131).

Holotype. Male (author's no. 447) U. S. A., Oregon, Klamath County, May 21 (F. W. NUNENMACHER), in the California Academy of Sciences. Vestiture dense. Eleventh antennal segment slightly less than twice as long as tenth segment. Median pronotal sulcus fine. Hind tibiae dilated and laterally compressed. Seventh abdominal sternite deeply emarginate; with long, broad lateral processes or arms, without a distinct central process at apex; with short and long, thick and thin spines at apex and below apex; subapically also depressed (fig. 132). Seventh tergite entire at apex (fig. 133). Eighth sternite and tergite missing from the already dissected specimen. Parameres (fig. 134) slightly tapering at apex; with a pair of lateral spines near apex; a weak, median, longitudinal ridge and a pair of longer lateral ridges present near apex. Apex of median lobe lost. Length: 7.5 mm.

Allotype. Female (author's no. 448), U. S. A., Oregon, Klamath County, May 21, in the Philadelphia Academy of Natural Sciences. Differs from the holotype as follows. Seventh abdominal sternite weakly emarginate at apex; subapically, thinly spinous above (fig. 135). Seventh tergite pointed at apex; with a ventral, finely spinous lobe (figs. 136–137). Length: 8.5 mm.

Paratypes. 8. designated. Two specimens come from the same locality as the holotype and are females (HNHM and the other in the CNHM). The third specimen, a female (author's no. 582) from Utah, Washington County, St George (PM). Five females from Cedarville, Modoc County, California, collected by W. F. BARR and R. F. SMITH on juniper on May 31 (UI). The seventh abdominal sternites are almost entire in them.



Figs. 138–146. *Retocomus riletti* sp. n. 138: Seventh sternite of ♂, ventral view; 139: seventh tergite of ♂, dorsal view; 140: eighth sternite of ♂, ventral view; 141: eighth tergite of ♂, dorsal view; 142: tegmen of ♂, ventral view; 143: median lobe of ♂, ventral view; 144: apex of median lobe of ♂, lateral view; 145: seventh sternite of ♀, ventral view; 146: seventh tergite of ♀, dorsal view

Bionomics. The Californian specimens were taken on juniper.

Seasonal distribution. The species has been collected in the month of May.

Remarks. I have much pleasure in naming this species in honour of the late Dr. JAMES A. G. REHN, Philadelphia Academy of Natural Sciences, U.S.A., in appreciation of his kindness towards me during my brief stay there in 1962.

The paratype from Utah presents a distributional discontinuity which I think reflects inadequate collecting rather than anything else. The species probably occurs in Neveda and even north-western Arizona.

16. **Retocomus riletti** sp. n. (Figs. 138–146; Map 2)

Diagnosis. The apical end of the tegmen which ist not deeply constricted behind the lateral spines and is gradually narrowed in front (fig. 142) in the male coupled with entire eighth abdominal tergite (fig. 141) and the long, broad, central process of the seventh tergite (fig. 146) in the female should serve to distinguish this species from others in the same region: *crichtoni* (figs. 51–52, 55) and *gratus* (figs. 81–83, 88–90).

Holotype. Male (author's no. 476), U.S.A., California, Monterey County, Paraiso Springs, May 17 (L. S. SLEVIN), in the California Academy of Sciences. Head nearly as wide as or slightly wider than pronotum at its widest part. Eleventh antennal segment slightly less than twice as long as tenth segment. Median pronotal sulcus weak. Hind tibiae dilated and laterally compressed. Seventh abdominal sternite deeply emarginate; with long, slightly convergent lateral processes or arms, and a prominent central process at apex; spinous at apex and below, subapically also depressed (fig. 138). Seventh tergite (almost) entire at apex (fig. 139). Eighth sternite with central process slightly longer than lateral processes; membranous near base (fig. 140). Eighth tergite entire at apex (fig. 141). Parameres (fig. 142) tapering at apex, with a pair of lateral (actually slightly dorsolateral) spines near apex; a distinct median longitudinal ridge and a pair of shorter lateral ridges present near apex. Median lobe as in figs. 143–144. Length: 9 mm.

Allotype. Female (author's no. 477), U.S.A., California, Monterey County, Paraiso Springs, May 17 (L. S. SLEVIN), in the California Academy of Sciences. Differs from the holotype as follows. Median pronotal sulcus not distinct, covered by white, longitudinal row of hairs. Seventh abdominal sternite entire at apex, with a weak, finely spinous, dorsal lobe (fig. 145). Seventh tergite with a very long central process and two short lateral processes; thinly spinous ventrally near apex (fig. 146). Length: 10 mm.

Paratypes. 11 designated. Records and Variation. U.S.A., California: Paraiso Hot Springs, Monterey County, 1 ♂, 5 ♀♀, April 22 – June 1 (CAS); 1 ♂ (BM); 1 ♂ (HUB); 1 ♂ (PM); 1 ♂ (PhANS). Tassajara Hot Springs, Monterey County, 1 ♂, September 25 (HNHM).

Intraspecific variation occurs in the following characters: vestiture sparse or dense; elytra with or without conspicuous maculations, sometimes with faint longitudinal stripes of light brown and black colours, not due to pubescence; legs black to brown or rufous; eyes light brown to dark in colour, with or without small black spots; and length varies from 8–10 mm among males.

Seasonal distribution. The species has been collected from April 22 to September 25.

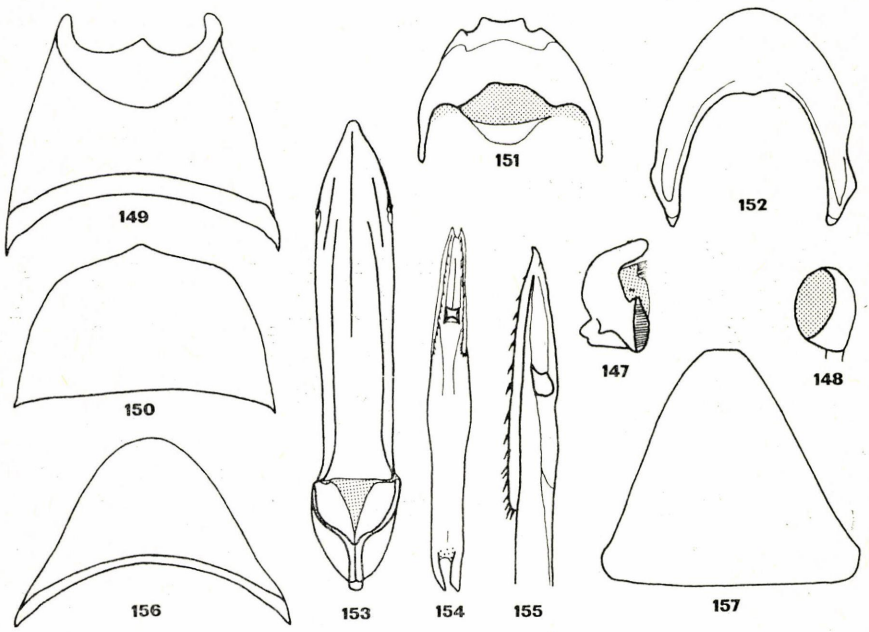
Remarks. I have much pleasure in naming this species in honour of Professor R. OMAR RILETT, Head of the Department of Biological Sciences, Illinois State University, U.S.A., in appreciation of his kindness towards me during my stay, training and teaching in his Department in 1961–1962.

17. **Retocomus wildii** (LeConte) (Figs. 147–157; Plate 1: Map 3)

Eurygenius Wildii LeConte ([10] 1855, p. 270); LeConte & Horn, ([11] 1883, p. 410).
Retocomus wildii, Casey ([7] 1895, p. 628).

Diagnosis. The securiform apical segment of the maxillary palp (fig. 148), the deeply ridged and apically produced clypeus, and the stripes on the elytra should serve to distinguish this species from all others in the genus.

Male (author's no. 473), U.S.A., Alabama (Dallas County?), Hazen, on *Quercus priceus*, April 4, in the British Museum (N. H.). Elytra with ten yellowish brown and black stripes or vittae, former due to pubescence. Vestiture dense. Head narrower



Figs. 147–157. *Retocomus wildii* (LeConte) 147: Mandible; 148: apical segment of maxillary palp; 149: seventh sternite of male, ventral view; 150: seventh tergite of ♂, dorsal view; 151: eight sternite of ♂, ventral view; 152: eighth tergite of ♂, dorsal view; 153: tegmen of ♂, ventral view; 154: median lobe of ♂, ventral view; 155: apex of median lobe of ♂, lateral view; 156: seventh sternite of ♂, ventral view; 157: seventh tergite of ♀, dorsal view

than pronotum at its widest part. Clypeus deeply ridged and produced infront, partly concealing base of labrum. Median pronotal sulcus deep. Seventh abdominal sternite deeply emarginate; with (not much) long lateral processes or arms, and a prominent central process at apex; apically and subapically thickly spinous ventrally (fig. 149). Seventh tergite with a distinct median process at apex (fig. 150). Eighth sternite with a long, weakly emarginate central process, and a pair of short lateral processes at apex; membranous near base (fig. 151). Eighth tergite entire at apex (fig. 152). Parameres (fig. 153) slightly tapering at apex; with a pair of lateral spines near apex; with a weak, median, longitudinal ridge and a pair of shorter ridges present near apex; central longitudinal area less pigmented and slightly desclerotized. Median lobe as in figs. 154–155. Measurements in mm. Total length 9. Antennal segments I–XI: 0.30, 0.19,

0.30, 0.26, 0.25, 0.25, 0.25, 0.26, 0.25, 0.22, and 0.31 respectively. Maxillary palp, segments I–IV: 0.07, 0.24, 0.18, and 0.30 respectively. Head: width across eyes 1.13; dorsal interocular distance 0.42. Pronotum: length 1.30; width at apex 0.68; maximum width 1.32; width at base 1.15. Elytron: length 6.5 ; maximum width 1.05. Front tarsus, segments I–V: 0.50, 0.28, 0.15, 0.08, and 0.47 respectively. Middle tarsi missing. Hind tarsus, segments I–IV: 0.76, 0.40, 0.18, and 0.50 respectively. Hind tibial spur 0.11.

Female (author's no. 474), U. S. A., Illinois, Cook County, Palos Park, July 14, in the British Museum (N. H.). Differs from the male as follows. Seventh abdominal sternite entire at apex (fig. 156). Seventh tergite truncate at apex, without processes or spines (fig. 157). Measurements in mm. Total length 9.5. Antennal segments I–XI: 0.38, 0.19, 0.28, 0.22, 0.22, 0.22, 0.23, 0.23, 0.23, 0.19, and 0.22 respectively. Maxillary palp segment I–IV: 0.07, 0.27, 0.15, and 0.23 respectively. Head: width across eyes 1.10; dorsal interocular distance 0.56. Pronotum: length 1.33; width at apex 0.73; maximum width 1.30: width at base 1.17. Elytron: length 6.5. Front tarsus, segments I–V: 0.55, 0.28, 0.21, 0.11, and 0.55 respectively. Middle tarsus, segments I–V; 0.63, 0.29, 0.21, 0.14, and 0.56 respectively. Hind tarsus, segments I–IV: 0.70, 0.30, 0.16, and 0.56 respectively. Hind tibial spur 0.12.

Type locality: U. S. A., Kentucky.

Records and Variation, U. S. A., Alabama: Hazen, Dallas County, on *Quercus priceus*, 1 ♂, April 4–May 5 (BM); 8 ex., (AMNH); 1 ex., (CU). Arkansas: east Arkansas, 2 ex., (HU). Illinois: Frankfort, Will County, 1 ex., June 8 (ISNHS); Galesburg, Knox County, 1 ex., (HU). Glenview, Cook County, 1 ♀, July 8 (Liljebald) (PhANS); 1 ex., (CNHM); 1 ex., (UMich). Kahokia, Saint Clair County, 1 ex., June 8 (UMiss). 3 miles west of McLean, McLean County, beating elm, 3 ♂♂, 1 ♀ (J. M. Campbell) (MA). Palos Park, Cook County, 1 ex., July 14 (CNHM). Putnam County, 1 ex., May 24 (ISNHS). Saint Joseph, Champaign County, 2 ex., June 9–12 (ISNHS). Wabash Valley, 2 ex., May (HU). South of Villa Grove, Douglas County, 1 ♀, July 2 (J. K. Bouseman & R. B. Selander) (MA). Indiana: Knox County, 1 ex., May 19 (CU). Iowa: State label only, 2 ex., (HU). Kansas: State label only, 13 ex., (CDA); 1 ♀ (HU). Douglas County, 1 ex., May 31 (UK). Topeka, Shawnee County, 2 ex., (CDA). Kentucky: State label only, 1 ex., (CU); 1 ex., (HU). Butler County, 1 ex., June 9 (UCB); 1 ♀, June 9 (J. M. Campbell) (MA). Henderson, Henderson County, 3 ex., May 7 (UMich). Missouri: State label only, 6 ex., (ISNHS); 1 ex., (UMiss); 2 ♂♂, (MA). St. Louis, St. Louis County, 3 ex., (CAS); 1 ex., (HU). Ohio: State label only, 1 ♀ (BM); 1 ♀ (HNHM); 2 ex., (AMNH); 1 ex., (PhANS). Cincinnati, Hamilton County, 1 ♀, May 29 (BM); 2 ♀♀; (PhANS); 1 ex., May 29 (CDA). Oklahoma: Stillwater, Payne County, 1 ♂, May 1 (O. Eastop) (CAS); 3 ex., April 28–May 1 (CDA). Tennessee: State label only, 2 ex., (ISNHS). Texas: State label only, 1 ♂ (BM); 1 ex. (CDA); 5 ex., (HU). Dallas County, 1 ex., April 26 – May 2 (CDA); 5 ex., (HU); 3 ex., (USNM). Victoria, Victoria County, 1 ♂ (author's no. 552), March 15 (PM). "Ind. T" = "Indian Territory", 1 ♂, 2 ♀♀ (Horn, (PHANS).

Intraspecific variation occurs in the following characters: vestiture well-developed or reduced; elytral stripes complete or broken and irregulary arranged, sometimes absent from most of elytra except apices; white, irregular maculations on elytra present or absent; and length varies from 7–11 mm among males and from 7.5–13 mm among females.

Bionomics. Specimens have been collected on *Quercus priceus* or by beating elm.

Seasonal distribution. The species has been collected from March 15 to July 14.

Acknowledgments

For the loan of gift of specimens, I am grateful to the various institutions and entomologists mentioned in the text. For their kind interest in my work, I am grateful to the following: Dr. M. Ian Crichton and Professor Alastair Graham of this Department, and Mr. Roy A. Crowson, University of Glasgow, Scotland. The photographs were taken by the University photographer, M. Ian Mc Lean. My brother, Mr. M. Abdur Rahman, assisted me in the

preparation of the manuscript. My wife, Mrs. ABIDA ABDULLAH, M.Sc., assisted me in proof reading. The work was carried out while holding a Postgraduate Studentship of the University of Reading.

References: 1. ABDULLAH, M.: A key to the genera of Eurygeniini, with redescription of the genus Bactrocerus and description of a new genus (Coleoptera, Anthicidae, Pedilinae) (Ann. Mag. nat. Hist., **5** (13), 1962 (1963), p. 595–600). – 2. ABDULLAH, M.: A note on the type species of Eurygenius (Coleoptera, Anthicidae, Pedilinae) (Entomologist, **97,** 1964, p. 15–17). – 3. ABDULLAH, M.: World species of the genus Stereopalpus and a proposes new oriental genus (Col., Anthicidae, Pedilinae) (Opusc. ent., **30**, 1964 (1965), p. 25 – 78) – 4. ABDULLAH, M.: A revision of the genus Pilipalpus (Coleoptera, Anthicidae: Pedilinae) (Beitr. Ent., **14** 1964, p. 3 –10) – 5. ABDULLAH, M.: A new species of Mastoremus from Arizona (Col., Anthicidae) (Ent. mon. Mag., **24** (4), 1964, p. 123 – 126). – 6. ABDULLAH, M.: A revision of the genus Duboisius Abdullah (Coleoptera, Anthicidae, Pedilinae) (Ent. Tidskr., 85, 1964, p. 57–83). – 7. CASEY, T. L.: Coleopterological notices VI. (Ann. New York Acad. Sci., 8, 1895, p. 624–639). – 8. HALDEMAN, S. S.: Descriptions of North American species of Coleoptera, presumed to be undescribed (Proc. Acad. nat. Sci. Philadelphia, **1** (30–31), 1843 p. 304). – 9. LECONTE, J. L.: Descriptions of new species of Coleoptera, from California (Ann. Lyceum nat. Hist. New York, **5,** 1852, p. 152). – 10. LECONTE, J. L.: Synopsis of the Pyrochroides of the United States (Proc. Acad. nat. Sci. Philadelphia, **7,** 1855, p. 270–275). – 11. LECONTE, J. L. & HORN, G. H.: Classification of the Coleoptera of North America: Anthicidae (Smithsonian misc. Coll., **507,** 1883, p. 409–412).

Explanation of Plate

1. *Retocomus colasi* sp. n. ♀ – 2. *R. crichtoni* sp. n. ♂ – 3. *R. crowsoni* sp. n. ♂ – 4. *R. wildii* (LECONTE), ♂ – 5. *Duboisius* sp. ♂ – 6. *Matoremus* sp. ♂.

Plate I.