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THE GENUS *BAETURIA* STÅL AS REPRESENTED IN NEW GUINEA (HOMOPTERA, CICADIDAE)

by

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(with 46 figs.)

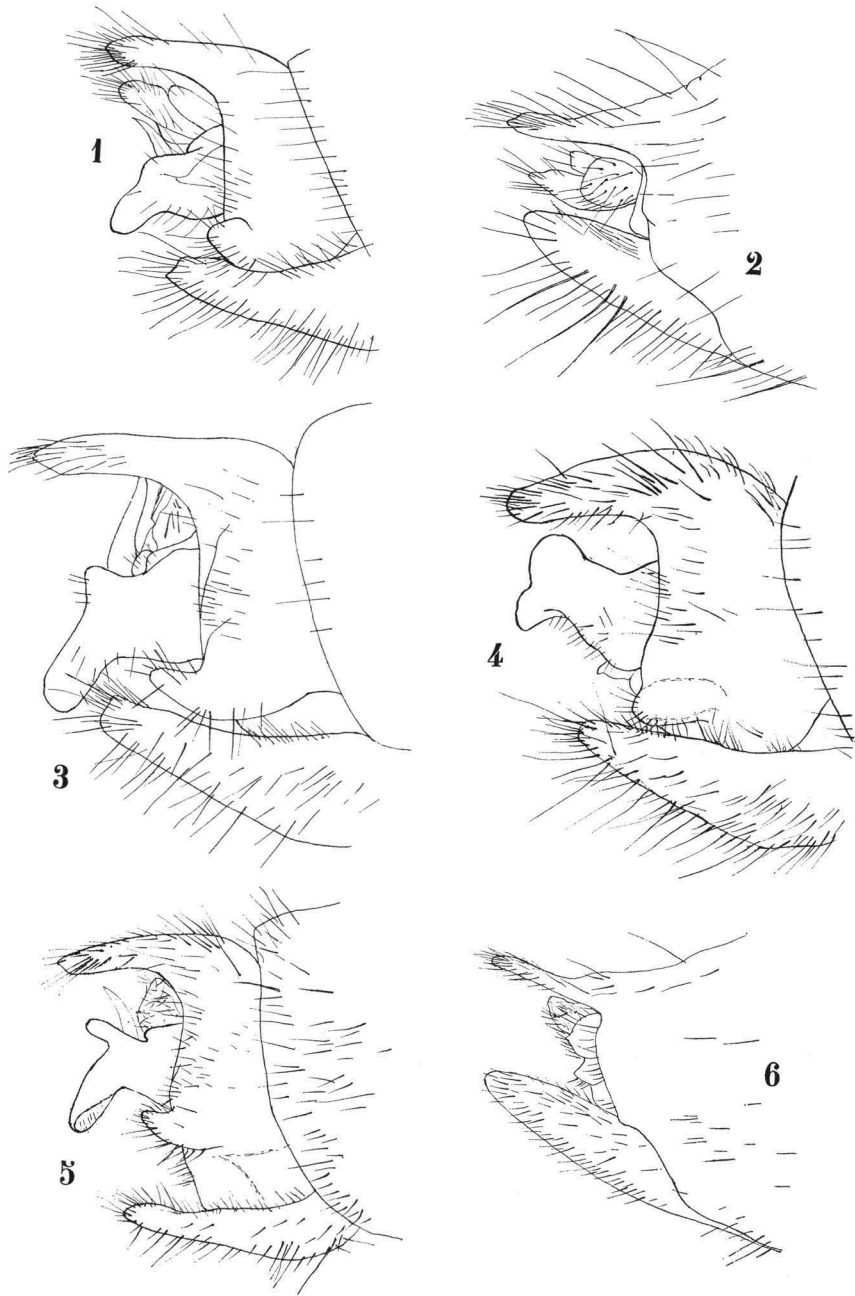
Until now only three species of the genus *Baeturia* have been recorded from New Guinea, viz., *B. bicolorata* Distant, *B. viridicata* Distant, and *B. nana* Jacobi. As I had the opportunity to study a fairly large collection of this group from different sources, collected in New Guinea, it appeared to me that this country lodges quite a number of *Baeturia* species, of which the present paper gives a the first account. I am sure, however, that a large number of species is not yet known to me, the more so as I left a number of species, of which my material was not sufficient, still undescribed.

As concerns the genus *Baeturia* itself, it seems not improbable that in future we are to divide it into two or more genera. As in my opinion, this only is to be done when treating of the group as a whole, and not in a paper dealing only with a geographic area, I must renounce from this now. For convenience, however, I can point to the structural differences in the frontal part of the vertex, which allow us to group the species into four sections, which, however, are not in all cases clearly separated.

In the first series of species the front is distinctly swollen, medially furrowed beneath, carinate in the middle and bicarinate in the upper part. The frontal part of the vertex thus is distinctly triangularly protruding, hardly broader than long, like in *Muda* Distant, but the structure of the male as well as of the female genitalia is very different, which brings the species into *Baeturia*.

Baeturia nasuta nov. spec. Figs. 1-2.

Colour reddish ochraceous, more or less speckled with brown. In the male the sides of the abdomen are of a lighter tinge, but the 3^d-8th segments show dark



brown patches laterally, and a medial dorsal line is usually darkened. Ocelli and the surrounding part of the vertex often red. On the legs the dark markings are somewhat larger, and show a tendency to form rings on the femora and stripes on the tibiae. Tarsi brown towards the top. Wings very slightly darkened, with small, round, white spots along the nerves, which, in light coloured males are sometimes hardly visible. The costal area and the basal parts of the nerves reddish in most ♀ specimens, less distinctly so in the ♂♂. In the ♂ the ultimate abdominal segment shows a strongly protruding central projecture dorsally, which is somewhat truncate at the apex and reversed guttershaped if seen from behind. Laterally there is a distinct, rounded protuberance. The sternite is rather short, truncate, reaching only slightly beyond the lateral protuberances. Gonopods with rather broad bases, curved downwardly at the top, and with a rounded protrusion of the upper edge. The gonapophyses of the ♀ are rather short and stout, not reaching distinctly beyond the apical dorsal protrusion of the ultimate tergite. — Length (including tegmina) of the ♂: 21-28½ mm; of the ♀: 26-36 mm. Iebele camp, (Archbold Expedition), 2250 m, 20 November-December 1938, L. J. Toxopeus, (Holoallo- and 30 paratypes); Baliem camp, 1600-1700 m, November-December 1938, L. J. Toxopeus (33 paratypes); Bernhard camp, 50 m, April-September 1938, J. Olthof, 5 specimens. — Paniai, Wissel lakes, New Guinea expedition K.N.A.G. 1) 1742 m, August-September 1939, 18 specimens; Araboe bivouac, 1750 m, 20 October 1939, 1 ♂ specimen. — Enarotali, Wissel lakes, 12 July 1952, W. J. Roosdorp, 1 ♂ specimen. — Saiko, Bubu-river, 5500-6000 ft, September-October 1936, 2 specimens in the British Museum; Mount Tafa, 8500 ft, February 1934, L. E. Cheesman, 2 specimens in the British Museum.

One ♂ specimen from the Baliem camp is of a much darker colour, the upper surface of head and thorax being for the greater part dark castaneous, the pronotum with somewhat lighter spots at both sides, the mesonotum with a yellow curved line from the anterior border to near the centre. There is no difference of any importance, however, in the structure of the genitalia.

***Baeturia arabuensis* nov. spec. Fig. 3.**

Five ♂ specimens from the Araboe-bivouac, 6-12 October 1939 New Guinea expedition K.N.A.G., and one from Enarotali, 7 January 1955, L. D. Brongersma show differences from the preceding species in the structure

1) Concerning the localities, visited by the New Guinea expedition of the Royal Netherlands Geographical Association (K.N.A.G.), see: Boschma, Prof. Dr. H., Tijdschrift van het Koninklijk Nederlandsch Aardrijkskundig Genootschap, Vol. LX, 4, p. 504-522.

of the genitalia. The lateral protuberance of the ultimate abdominal segment is distinctly longer and thinner; the gonopods show a much more protruding dorsal hump. In these ♂ specimens the dorsal dark stripe on the abdomen is less distinct than it is in the foregoing species, but I cannot find any appreciable difference between the ♀♀ of both, so I must renounce from indicating female types. The size is about the same as in *B. nasuta* m. The 5 ♂ specimens from the Araboe-bivoeac are Holo- and paratypes. 10 ♀ specimens from the Araboe-bivouac and one from Enarotali (1958, Adang Roushdy coll.) probably belong to this species too.

Baeturia bipunctata nov. spec. Fig. 4.

Similar in general aspect to *B. nasuta* m., and probably with the same sexual dimorphism. The small black spots on the mesonotum before the cruciform elevation, which also are indicated in a number of specimens of *B. nasuta*, are very distinct in the ♂ type, as well as in the ♀ that probably belongs to this species. Wings hardly tinged, and without traces of white spots along the nerves. The male genitalia are very distinct from those of *B. nasuta*, the dorsal protrusion of the tergite is slightly more curved, the lateral corners hardly developed, the gonopods very stout, with a large rounded dorsal hump. The only female from the same locality does not show a notable difference in the structure of the genitalia against *B. nasuta* ♀. — Length of the ♂: 31 mm; of the ♀: 35 mm. — Rattan camp, inner New Guinea, 1300 m, February 1939, L. J. Toxopeus, Archbold Expedition, one ♂ (holotype) and one ♀ specimen.

Baeturia mamillata nov. spec. Figs. 5-6.

Also similar in general aspect to *B. nasuta* m., but of slightly lighter colour, the legs with few dark markings, the wings hyaline. The dorsal band of brown spotlets on the abdomen of the ♂ is rather distinct, as are the two small spots on the mesonotum. The black spots on the sides of the 3d-8th abdominal segment are distinct, even in ♀ specimens. The ♂ genitalia are characterized by the long, nipple-shaped dorsal protrusion on the gonopods and by the rather acute lateral protrusion at the ultimate ventral segment. In the ♀ the dorsal protrusion at the ultimate tergite is somewhat longer and more slender than in the foregoing species. Length of the ♂: 23¾-25½ mm, of the ♀: 27½-31 mm. — Papua, Mondo, 5000 ft. January 1934, L. E. Cheesman, British Museum 1934-321, Holo- allo- and 25 paratypes. — One ♂ specimen from Lower Mist camp, 1500 m, 29 January 1939, L. J. Toxopeus, one ♂ and three ♀ specimens from Sigi camp, 1500 m, 23-24 February 1939, L. J. Toxopeus, one ♂, Sibil, Star Range, 6 June 1958, R. T. Simon

Thomas, 14 ♂ and 48 ♀ specimens from Sibil, Star Range, 1260 m, 11 April-17 June 1959, and one ♂ and two ♀ specimen from Ok Tenma, 18-19 May 1959, Netherlands New Guinea expedition also belong to this species.

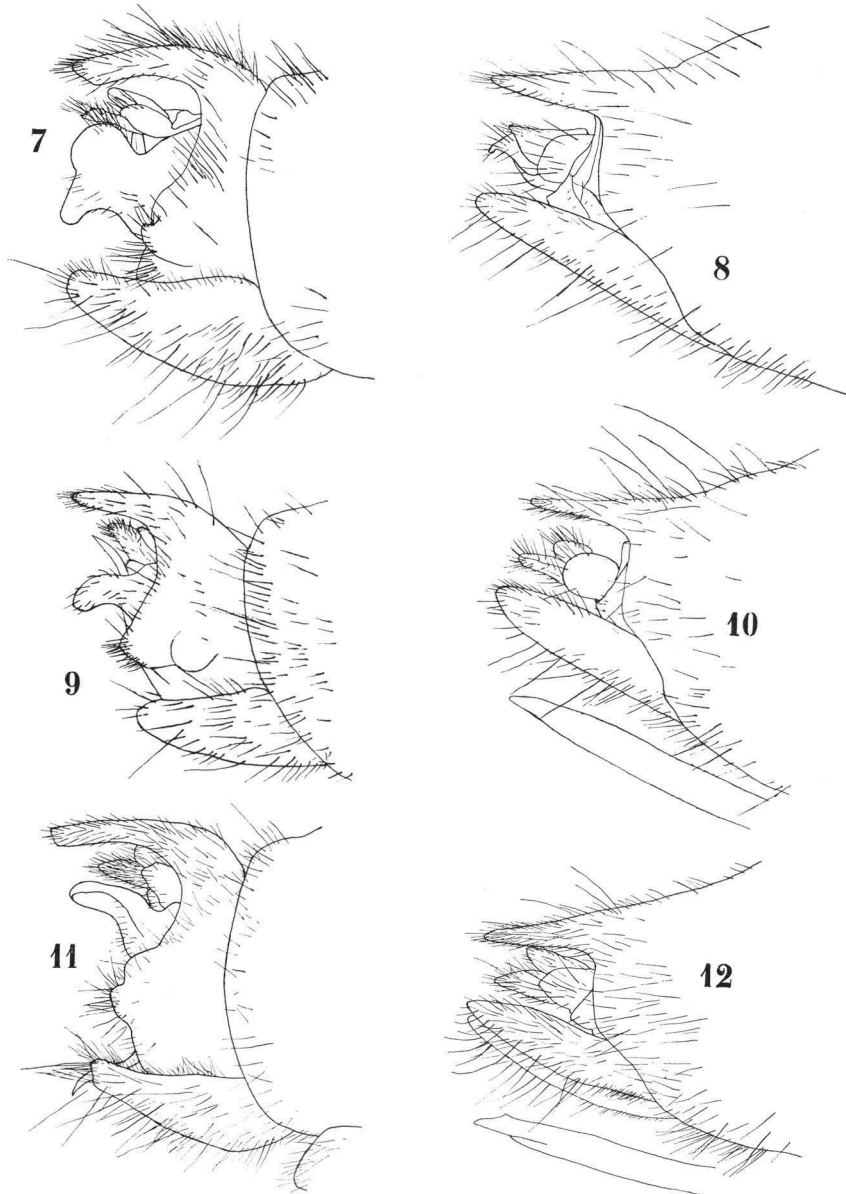
***Baeturia laminifer* nov. spec.** Figs. 7-8.

A medium sized species with pale yellowish ground colour, the thorax and basal part of the nerves of the forewings with a greenish tinge. The markings in the ♂ are similar to those in the foregoing species; the darkening of the medial dorsal line of the abdomen very distinct. The ♂ gonopods show a dorsal laminiform protrusion, not unlike that occurring in *B. bipunctata* m., but the gonopods are shorter, the dorsal protrusion of the ultimate tergite slender, and there is a distinct though short protrusion at the sides of the ultimate segment.

Besides the holotype ♂ from Mafulu (length 23 mm), 4000 ft, January 1934, L. E. Cheesman, the ♂ (length $24\frac{2}{3}$ mm) and two ♀♀ (lengths 30 and $30\frac{1}{4}$ mm) from Mondo, I found in the collections of the British Museum a very similar ♂, from Kokoda, 1200 ft, July 1933, L. E. Cheesman, length $24\frac{1}{2}$ mm, that is slightly paler in hue, and has the laminiform protrusion on the gonopods still more distinctly cut from the apical part. Also two ♀♀ from Ekeikei, April 1903, Pratt, possibly belong to this species; these ♀♀ are spread, their flight is 44 and $51\frac{1}{3}$ mm respectively.

***Baeturia parva* nov. spec.** Figs. 9-10.

This is the smallest species in the group with swollen front and triangular frontal part of the vertex. In colour it is very similar to the foregoing species, but in the ♂ the sides and the venter of the abdomen hardly show any brown markings except on the last segments, and thus the dorsal brown stripe and the lateral blackish spots are still more obvious. In both sexes the ground colour is ochraceous, sometimes somewhat reddish, in many cases the mesonotum slightly darker, greyish. The ♂ gonopods are slightly curved downwardly, without any dorsal protrusion in the apical part. The apical edge of the genital segment shows a protruding corner, which in lateral view, dorsally is hardly separated from the lateral edge. In the ♀ the dorsal protrusion of the genital segment is rather slender and pointed. The gonapophyses rather slender and narrowly rounded at the top. Length of the ♂: $18\frac{1}{2}$ -19 mm, of the ♀: 19-23 mm. — Hollandia, 0-60 m, 12-21 July 1939, L. J. Toxopeus; 22-28 February 1952, 8-16 October and 17-26 November 1954, L. D. Brongersma and L. B. Holthuis; February 1958, G. den Hoed, holo- allo- and 10 paratypes, 3 specimens with indication "on light"; one ♀ Ifar, December 1957, G. den Hoed Paratype; one ♂, Dojo, April 1958, G. den Hoed Paratype; one



♀: Skroe, K. Schädler; one ♀: Friedrichwilhelmshafen, coll. Fruhstorfer;
 one ♀: Fakfak, 10 April 1952, L. D. Brongersma; one ♀: Djidmaoe, 13
 June 1952, L. D. Brongersma and W. J. Roosdorp; two ♀♀: Ajamaroe, 30
 May 1952, on ligth and 3 March 1955, L. D. Brongersma and W. J. Roos-

dorp; one ♀: Joka on Sentani lake, 21 October 1954, M. Boeseman and L. B. Holthuis.

Baeturia marmorata nov spec. Figs. 11-12.

B. marmorata is more or less intermediate between the first and the second series of species, the frontal part of the vertex being somewhat less narrowly rounded anteriorly, but distinctly narrower than in *B. guttulinervis* m., to which species it has a certain resemblance in the colour pattern of the body. The wings, however, do not show any darker spots on their membranes. Ground colour greyish or slightly greenish yellow, strongly marked with brown spots and patches. A longitudinal stripe on the head and thorax generally unspotted. The black points before the cruciform elevation on the mesonotum very distinct. In the ♂ the abdomen is yellow for the greater part, showing distinct black spots on the sides of the 3^d to 6th segments, that are of nearly equal importance. The ♂ of this species is characterized by its gonopods, that are rather slender, and show a distinct dorsal impression at the base. The upper protrusion of the genital segment is rather stout and curved at the base; the lateral corners are double and bluntly rounded. The ♀ genital segment is very similar to that of *B. guttulinervis* m., but, because of the smaller size of the animal of course smaller too. — Length of the ♂: 23-29½ mm; of the ♀: 28½ mm. — Araucaria camp, 800 m, 10 March-3 April 1939, L. J. Toxopeus, Archbold expedition, two ♂♂ and one ♀ (holoallo- and paratypes); Rattan camp, 1050 m, February 1939, L. J. Toxopeus, Archbold expedition, two ♂♂ (paratypes).

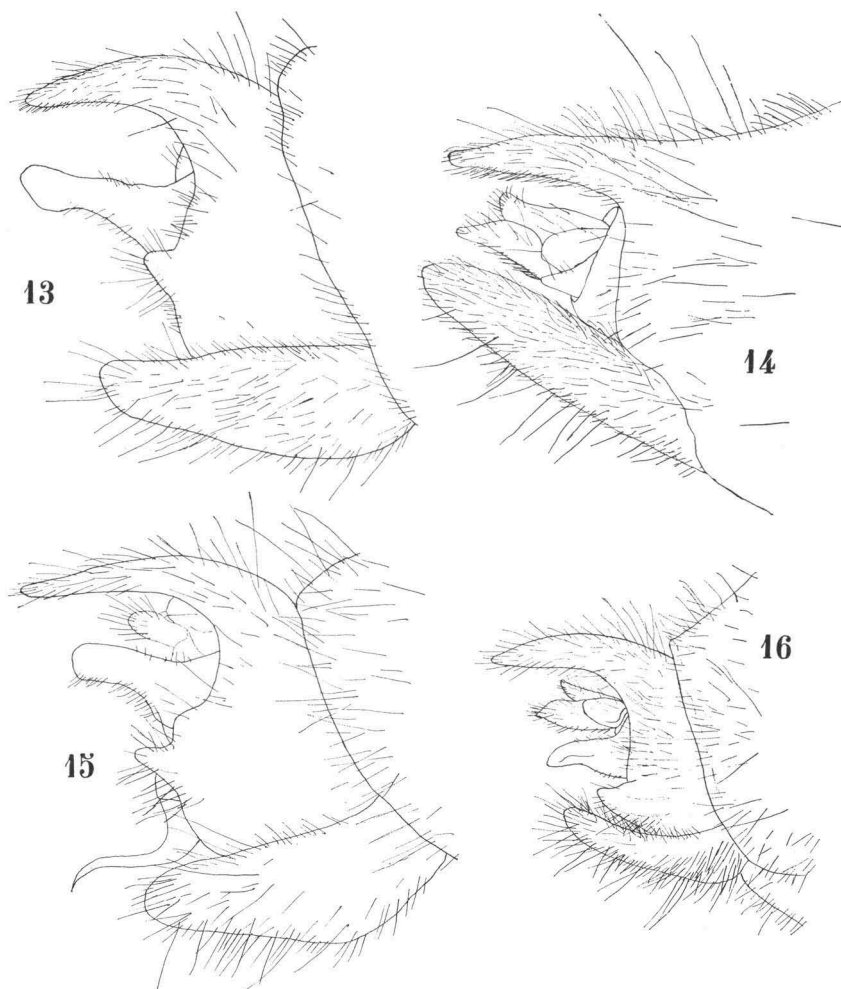
The second series of species is distinguished in having the upper area of the front broader, not triangularly protruding as in the first series, and about two times as broad as long. Seen from aside the front is distinctly swollen; seen from above the anterior edge is rounded.

In the next four species the gonopods are nearly straight, blunt and rather long.

Baeturia guttulinervis nov. spec. Figs. 13-14.

This species is rather distinct from its allies by the brown markings along the nerves of the forewings, which are interrupted by spots that are hardly lighter than the rest of the membrane (in the other species with spotted wings the clear spots are generally the more distinct). Colour ochraceous, with a varying amount of brown markings. In dark specimens the pronotum is nearly entirely suffused with brown, only a median stripe and a posterior border remaining yellowish. Metanotum with large brown stripes at both sides

near the middle, the lateral areas suffused with brown. Abdomen strongly speckled with brown in the ♀, yellow with dorsal and lateral brown markings and a row of black spots in the ♂. The posterior part of the thorax and the edges of the abdominal segments with stiff, goldy shining hairs. The brown



markings are partly obsolete in some specimens. The dorsal protrusion of the ♂ genital segment is rather stout, and regularly curved. The lateral edge shows a rounded protrusion beneath. — Length of the ♂: $31\frac{1}{4}$ - $41\frac{2}{3}$ mm; of the ♀: $34\frac{2}{3}$ - $41\frac{2}{3}$ mm. — One ♂: Mist camp, 23 January 1939, paratype; one ♂: Lower mist camp, 30 January 1939, paratype; one ♀: Top camp, 19

February 1939, paratype; 2 ♂♂ and 6 ♀♀: Rattan camp, February 1939, paratypes; 2 ♂♂ and 2 ♀♀: Araucaria camp, 8-23 March 1939, holo- allo- and paratypes. All specimens collected by L. J. Toxopeus during the third Archbold expedition.

Baeturia guttulipennis nov. spec. Fig. 15.

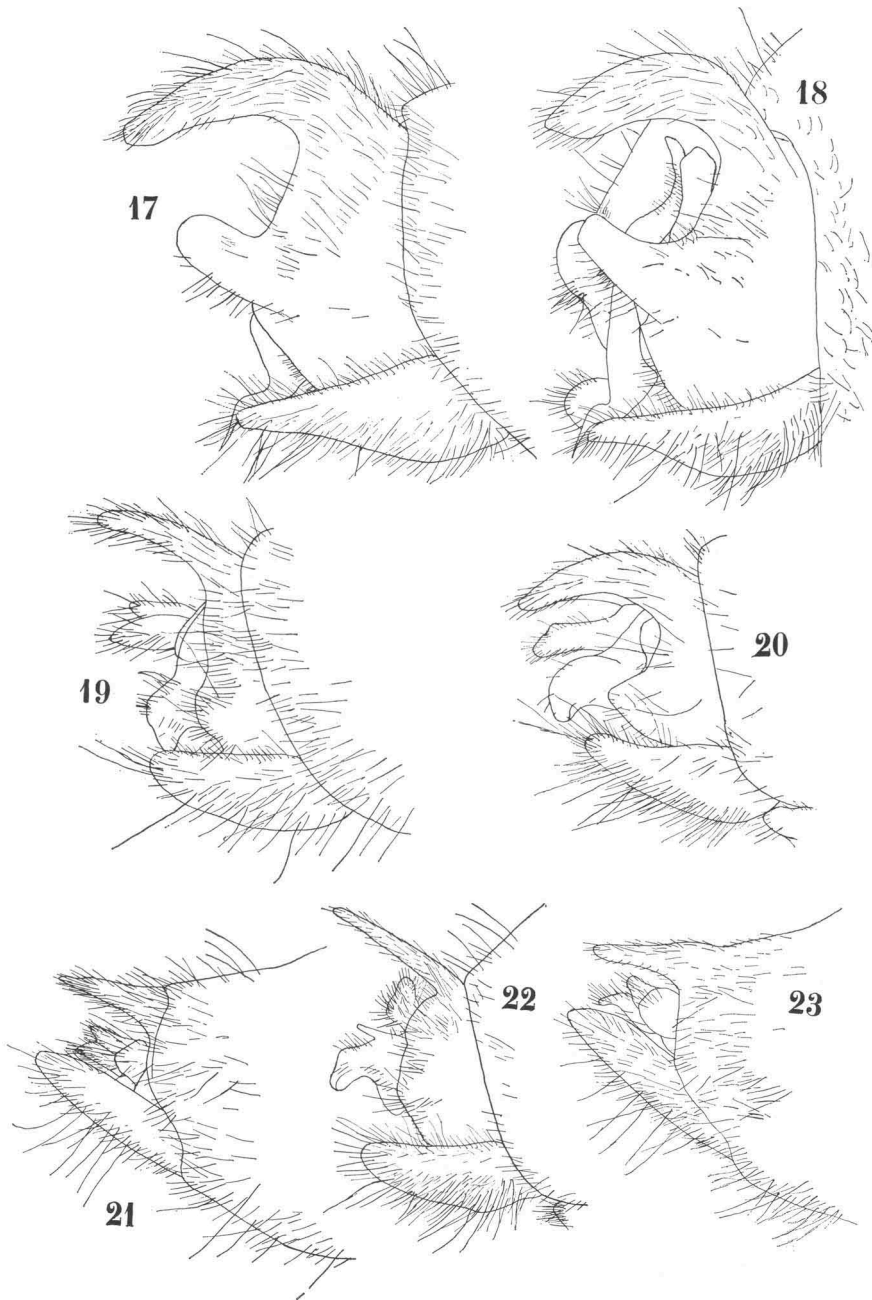
B. guttulipennis is allied to the foregoing species. The spots on the forewings are not restricted to borders along the nerves, and indeed for the major part are not touching the nerves at all. The design on the body is similar to that of *B. guttulinervis* m., but the colour is much lighter. Moreover there is a difference in the structure of the ultimate abdominal segment in the ♂, the dorsal protrusion being longer and less curved, the lateral hump is more acute, and dorsally accompanied by another blunt protrusion. — Length (of the ♂): 28½ mm (body: 19 mm, flight 52 mm). One ♂, holotype, Bewani river territory, 1200 m, 1939, W. Stuber. A female specimen, possibly belonging to this species, was collected at Antares bivouac 39 A, 1500 m, Star Range, Netherlands New Guinea expedition, 6 July 1959.

Baeturia hirsuta nov. spec. Fig. 16.

This species is in general structure not unlike the foregoing species, but the wings show no traces of colour markings. The whole body is rather hairy, even the ciliae on the wing nerves are more distinct than usual in this genus. In the ♂ the upper protuberance of the ultimate segment is rather stout and long, and but slightly curved. The protruding corners at the sides are distinct and rather acute. The gonopods are nearly straight. — Length of the ♂: ± 24-26 mm. — One ♂ specimen: Etnabai, 21 November 1939, New Guinea expedition K.N.A.G., holotype; one ♂ specimen without locality; one ♂ specimen: Dor(eh), Wallace, 68. 4, in the British Museum (Natural History), paratype.

Baeturia rufula nov. spec. Figs. 17-18.

Upper side reddish ochraceous, a few spots on the head, the impressed areas on the pronotum and the greater part of the underside more yellowish. Mesonotum greyish brown, with grey markings anteriorly and with a few brown spots at both sides. Lateral spots on the abdomen pale brown. Wings almost clear, with reddish nerves. This species is very distinct by the structure of the ♂ genitalia, the ultimate tergite showing a curved upper protrusion and very long lateral protrusions, which (at least in our specimen) touch each other in the median line, which is possibly due to shrinking after death. The



gonopods are long, rather slender, rounded at the tops, in our specimen erect, and in lateral view completely hidden (cf. fig. 18 in skew view) The oedagus is long, sharp pointed and with S-form curve in the apical part. Our specimen is slightly immature, and certain characters — e.g. colour — can be influenced by the immaturity; the structure of the ultimate tergite cannot be due to this circumstance, and it is very different from the structures in all other specimens (except *B. digitata* m.) of the genus. Length (of the ♂): 29 mm. — One ♂, holotype, Araucaria camp, 800 m, 30 March 1939, L. J. Toxopeus (3^d Archbold expedition).

***Baeturia vanderhammeni* nov. spec. Fig. 19.**

Greyish ochraceous, the head and thorax slightly greenish, speckled with dark brown. The dorsal stripe of brown markings on the abdomen of the ♂ is broader and less distinctly limited towards the sides than in allied species; lateral blackish markings more or less scattered in brown spotlets. Apical part of the costal nerve blackish; a few small black markings on the nerves, especially towards the top, also on the hind wings. The membrane of the fore and hind wings almost clear, unspotted. The male genitalia of this species are characterized by the slightly curved upper protrusion of the ultimate tergite and its blunt, rounded lower corner. The gonopods are rather short and stout, the apices bent downward. — Length (of the ♂): 26¼ mm — One ♂, holotype, Hollandia, January 1954, L. van der Hammen; three, rather badly preserved specimens from Hoofdbivak, Kaiserin Augusta river (= Sepik r.), November 1910, K. Gjellerup, probably belong to the same species.

In the collection of the British Museum (Natural History) I found a ♂ specimen, that agrees with the present species in the structure of the genital organs, but is different in colour, the ground colour being more reddish, the edges of the abdominal segments reddish ochraceous, the dorsal stripe more distinctly limited towards the sides and interrupted down the centre, so as to form two sublateral stripes. — One ♂, Mimika river, A. F. R. Wollaston.

***Baeturia brongersmai* nov. spec. Figs. 20-21.**

A green species of moderate size. In parts the colour has turned into yellowish, but as these parts are not the same in the three specimens on hand, it is probable that the animals are green throughout when alive. On the third abdominal segment a distinct black spot laterally, on the following segments these spots are more or less indicated. Legs and nerves of fore and hind wings probably entirely green in living specimens. The structure of the ♂ gonopods is not unlike that occurring in *B. vanderhammeni* m., the apical dorsal protrusion of the ultimate tergite, however, is more distinctly curved, and the

lateral protrusions are stout, nearly rectangular. The dorsal protrusion of the genital segment in the ♀ rather thin and pointed. The apical edge of the segment widely curved. Length of the ♂: $24\frac{1}{4}$ - $24\frac{1}{2}$ mm, of the ♀: 26 - $26\frac{1}{4}$ mm. — One ♂, holotype, and two ♀♀, allo- and paratypes: Tanah Merah, Upper Digoel, 17 m, 9 and 15 April 1955, L. D. Brongersma and M. Boeseman; one ♂ and 3 ♀♀ paratypes, Tanah Merah, 17 m, 25-29 September 1959, Netherlands New Guinea expedition.

***Baeturia tenuispina* nov. spec. Figs. 22-23.**

Not unlike *B. mamillata* m. in general appearance, but with a more rounded frontal part of the vertex, which is about two times as broad as long. The colour is greyish ochraceous, sometimes with some reddish tinge, in the ♂ with black lateral spots on the abdomen, like e.g. in *B. mamillata* m., the dorsal obscure stripe not very prominent. Sometimes the apical edges of the abdominal segments red. The ♀ is much more strongly speckled with brown throughout. Wings hyaline. The ultimate abdominal segment of the ♂ dorsally with a slender, nearly straight or slightly curved spine. The gonopods with a dorsal hump, and a backwardly directed protrusion more basally, which is notably thinner than the corresponding protrusion in *B. mamillata* m. The lateral edge of the ultimate ventral segment shows no protrusions more downward. Length of the ♂: $24\frac{3}{4}$ - $26\frac{1}{2}$ mm; of the ♀ $27\frac{1}{2}$ -30 mm. — Kokoda, Papua, 1200 ft, August-October 1933, L. E. Cheesman, holo-, allo- and paratypes in the British Museum (Natural History).

In the next group of species the front is less swollen, often nearly flat, and generally distinctly separated from the frontal area of the vertex, which is about $2\frac{1}{2}$ -3 times broader than long.

To this group belongs *B. bicolorata* Dist. Fig. 24. It is somewhat similar in general appearance to *B. brongersmai* m., the colour being greenish, and with a black spot on the sides of the third abdominal segment. In our specimens further lateral spots are invisible. There is a notable difference, however, in the structure of the ♂ genitalia of both species. The gonopods in *B. bicolorata* Dist. are rather long and straight, the dorsal protrusion of the ultimate segment is shorter and hardly curved, the lateral protrusions are blunt, dorsally hardly separated from the straight part of the lateral edge.

The type of this species is a ♀ from Fly River, New Guinea. The drawing of the ♂ genitalia (fig. 24) is made after a specimen from Hollandia, 23 February 1952, L.D. Brongersma. There is also a series of 9 ♂♂ and 3 ♀♀ from the same locality, collected by L. J. Toxopeus, (3d Archbold expedition). These specimens begin to show more or less the "striking bicoloration",

mentioned by Distant, which I think is due to changements of the green pigment after death.

Baeturia viridis nov. spec. Figs. 25-26.

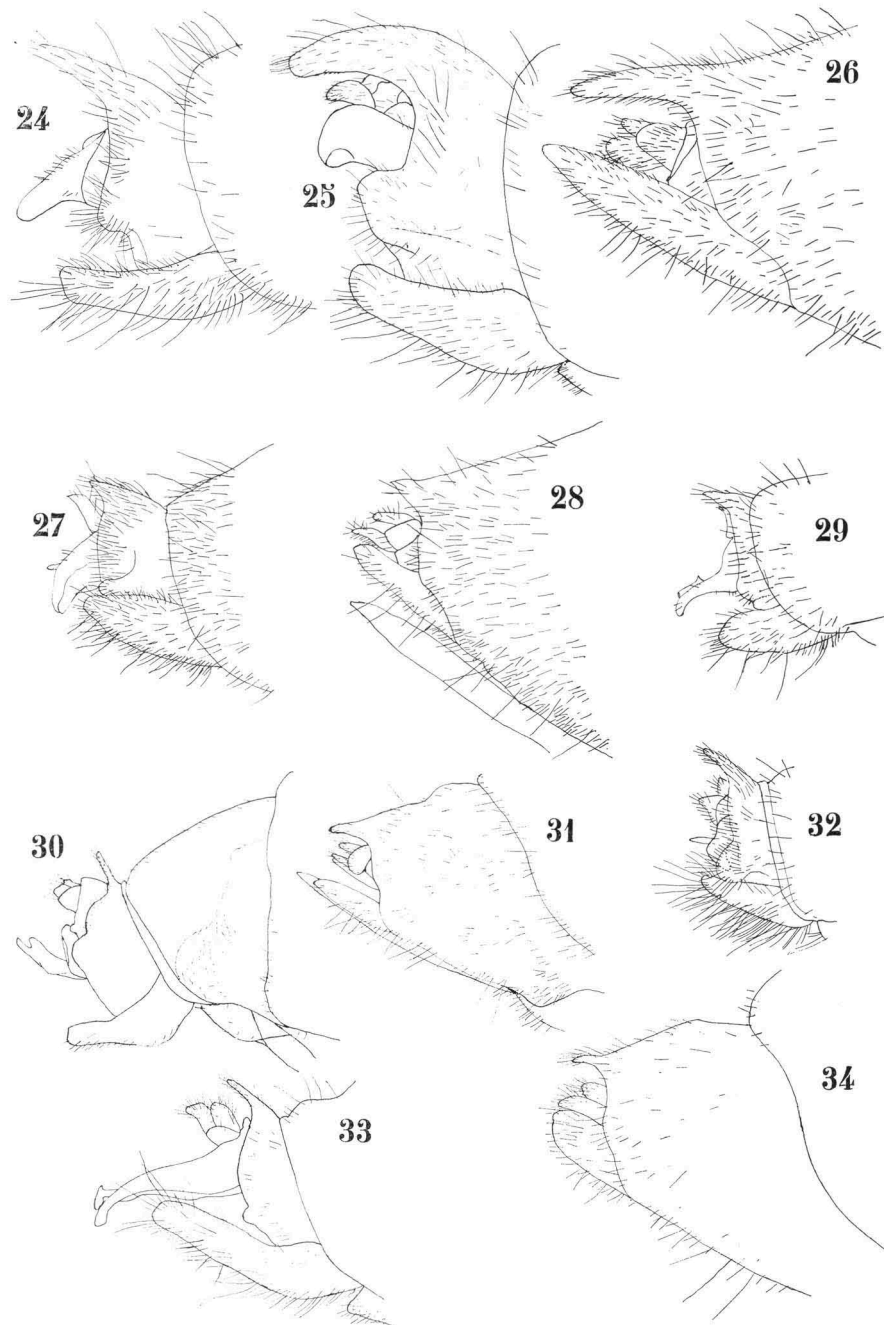
This species is not unlike *B. brongersmai* m. in general appearance as well as in the structure of the ♂ genitalia, but it is larger, and easily recognizable by the broader frontal area of the vertex. The colour is greenish throughout, without black spots on the sides of the abdomen. The mesonotum is somewhat more blueish green, with a central yellowish spot behind, before the cruciform elevation, emitting three yellow stripes towards the anterior edge. In our specimens the ventral parts and the tarsi are yellowish (fainted?). Ultimate abdominal segment of the ♂ with thick and strongly curved protuberance dorsally, and with broad, blunt lateral protrusions, which show a very distinct lateral furrow on their outer surfaces. Gonopodes blunt, slightly bent downwards at the top, with a large impression at the lower edge. The ♀ genitalia are similar to those of *B. bicolorata* Dist., the upper apical protuberance is slightly stouter, the lateral edge of the segment less strongly curved. Length of the ♂: 29 mm; of the ♀: 32¾ mm. — One ♂, holotype, Manokwari, 25 April 1952, L. D. Brongersma and W. J. Roosdorp; one ♀, allotype, Manokwari, 12 March 1955, L. D. Brongersma.

Baeturia humilis nov. spec. Figs. 27-28.

Much smaller than the foregoing species. Of a nearly uniform green colour. This species and the following are characterized by the very short, blunt apical spine at the upper edge of the ultimate abdominal segment in both sexes. In the ♂ the gonopods are rather stout at the base, distinctly curved downwards towards the top, and with a very long and well marked ventrolateral impression, which is limited by a sharp brownish carina above. Length of the ♂: 20⅔-21⅓ mm; of the ♀: 22 mm. — Two ♂♂, holo- and paratype, and one ♀, allotype, W. of Sorido, Biak, Schouten Islands, 4 December 1953, L. van der Hammen.

Baeturia minuta nov. spec. Fig. 29.

This species, that agrees with the foregoing in the structure of the upper apical spine on the genital segment, is still smaller. The body is of a uniform green colour, but the tibiae are bright orange red, and also the genital valve is of a more yellow colour, but as the specimen seems to be slightly immature, this can be due to changements post-mortem. The ultimate abdominal segment in the ♂ shows in its lower lateral part a longitudinal carina, evolving from a



superficial notch. The structure of the gonopods is very different from that in the foregoing species, the apical parts are long and slender, abruptly emitting from the broad base. The tops curved downwards, the apical impression hardly visible. The oedeagus is tubiform, with an erected, short dorsal spine. Length (of the ♂): $17\frac{1}{2}$ mm. — One ♂, holotype, Hollandia, 23 February 1952, on light, L. D. Brongersma. A second ♂ specimen, still more immature, from Manokwari, 1954, J. C. Bauwens, probably belongs to the same species.

Baeturia chinai nov. spec. Figs. 30-31.

Yellowish ochraceous, the mesonotum still with a greyish green tinge; probably the green colour occupied a much larger part of the animal during its lifetime. Genital segment in both sexes darkened. Wings nearly transparent, the veins yellow, slightly darker towards the tops of the wings. The gonopods are small, curved upwardly; the strong oedagus is bifurcate at the top and shows two lamelliform, angular protrusions at the sides. In the ♀ the dorsal protrusion to the ultimate tergite is rather short and straight. — Length of the ♂: 19 mm; of the ♀: $17\frac{1}{2}$ mm. — Port Moresby area, May 1947, L. Jones, one ♂ and one ♀, holo- and allotype, in the British Museum (Natural History).

Baetura ustulata nov. spec. Fig. 32.

Another small species, differing from the foregoing by the longer dorsal spine on the ultimate abdominal segment. The colour of the underside and of the abdominal apex is green; the upper parts of head, thorax and about four abdominal segments are brownish ochraceous. The anterior tibiae reddish, the nerves of the wings for the greater part ochraceous. The gonopods of the ♂ are not unlike those of *B. humilis* m., but slightly bent downward. In the unique specimen I have for description they are partly hidden behind the lateral lobes of the genital segment, which are very large in this species. Their shape, visible from behind in skew view is indicated in the drawing. The genital valve is set with many long and erect hairs at the underside. Length (of the ♂): $18\frac{1}{3}$ mm. — One ♂, holotype, Bernhard camp B, 100 m, 10 April 1939. L. J. Toxopeus (Third Archbold expedition).

Baeturia stylata nov. spec. Figs. 33-34.

Probably entirely greenish when alive, only the anterior tibiae probably reddish. The species on hand, however, are for the greater part — the females nearly entirely — of a yellow tinge. Wings hyaline; the veins probably reddish in parts in living specimens. The ♂ is easily recognizable by the long and

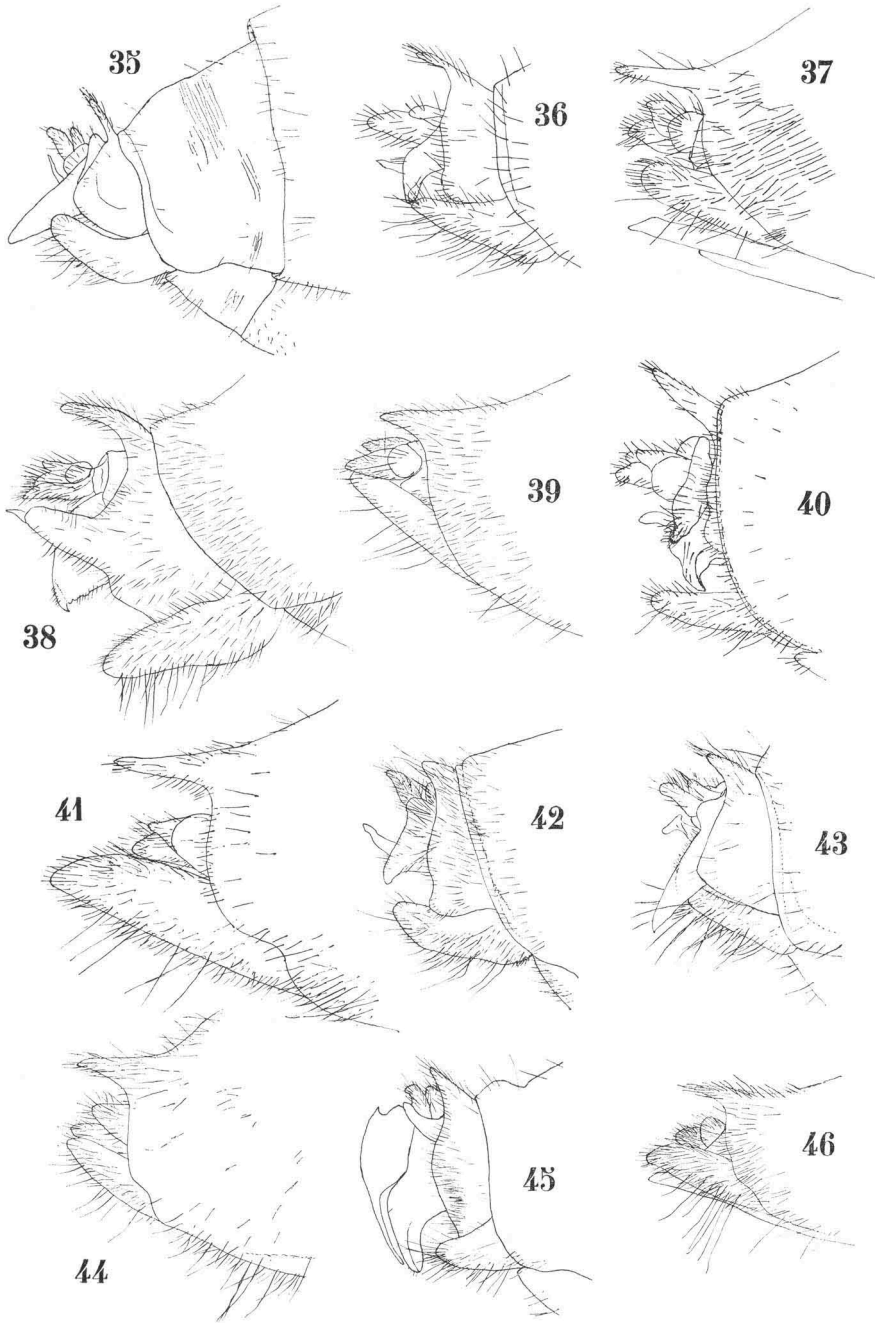
slender gonopods, which are slightly curved downward towards the top. The long oedagus shows a small tooth dorsally, before the apex, which is curved downward in a nearly right angle. The dorsal protrusion of the ultimate ventral segment straight, rather short and slender, as in the foregoing species. The lateral corners of the segment only slightly protruding. In the ♀ the apical dorsal protrusion is distinctly curved downward. — Length of the ♂: 18 mm; of the ♀: about 21½ mm (the top of the wing is damaged). — Kokoda, Papua, 1200 ft, 1933, L. E. Cheesman, two males, holo- and paratype, and one ♀, allotype. Endeavor R., Distant coll., one ♀ (with label: *Melampsalta flava* G. Frg.).

Baeturia pallida nov. spec. Fig. 35.

Pale greenish yellow, the ocelli red, the antennae black, the mesonotum whitish in the centre, yellow along the sides. Legs yellowish, the extreme tops of the posterior tibiae and of the posterior ultimate tarsal joint brownish. Nerves of the wings yellowish, small parts of them, near the top of the anal vein, brownish in both wings; the veins between the apical cells showing faint alternately lighter and darker parts. Genital segment of the ♂ with a thin, straight, erect spine dorsally; the lateral edges rounded, without a protuberance. The gonopods stout, straight, wedge-shaped in lateral view. — The only specimen on hand is set, flight about 34 mm, length of the body 11⅔ mm. — One ♂, holotype, Maprik, Northern New Guinea, 16 October 1957, J. Smart, in the British Museum (Natural History).

Baeturia toxopeusi nov. spec. Figs. 36-37.

Of a nearly uniform cinnamon brown colour, in some species with an olivaceous tinge on the thorax, in many specimens with brown apical borders to the abdominal tergites. The pronotum shows some filigrane like yellowish markings at the sides. In the structure of the ♂ genital organs this species is not unlike the foregoing one, it is, however, much larger and has no circularly protruding lobes at the lower lateral edges of the ultimate ventral segment. The gonopods distinctly bent downward, and with a distinct impression at the sides. In the ♀ the dorsal spine at the ultimate tergite is long and slender. The sides of the segment with rather long, semierect hairs. Length of the ♂: 26½-29⅔ mm, of the ♀: 25½-37 mm. — 8 ♂♂, holo- and paratypes, and 4 ♀♀, allo- and paratypes: Mist camp, 1800 m, 26 December 1938-23 January 1939; 2 ♀♀, paratypes, Lower Mist camp, 1500 m, 28-29 January 1939; 3 ♀♀, paratypes, Top camp, 8 January-9 February 1939, L. J. Toxopeus (Third Archbold expedition).



Baeturia digitata nov. spec. Figs. 38-39.

Somewhat smaller than *B. toxopeusi* m., but rather similar in general appearance. Reddish ochraceous throughout, the thorax with greyish markings of various extend. The segments of the abdomen with darker hind borders. The female slightly darker than the males. The males show a number of small black speckles on the nerves of the forewings in the anterior subapical region. The male of this species is very distinct by the long, digitiform protrusion on the lower lateral edge of the genital segment, in which it agrees with *B. rufula* m., and by the peculiar form of the gonopods, which are broad and flat, with a widening at the top, forming a triangular, flattened small apical plane, of which the lower (apical) edge is denticulate. In the ♀ the dorsal protrusion of the ultimate abdominal segment is pointed with broad base, the edge of the segment beneath it is curved very regularly, without narrow curvatures. — Length of the ♂: $23-24\frac{1}{3}$ mm; of the ♀: $24\frac{2}{3}$ mm. — Rattan camp, 1200 m, February 1939, L. J. Toxopeus, Archbold expedition, Three ♂♂ and one ♀ (holo- allo- and paratypes).

In the fourth group of species, the frontal part of the vertex is still broader than in the foregoing group, the width being always more than three times its length if seen from above, the anterior edge rounded. In the ♀ the character is often more distinct.

Baeturia valida nov. spec. Figs. 40-41.

This species is not unlike *B. bicolorata* Dist. in general appearance, but of very different colour. The colour of the ♂ is of a nearly plain olivaceous ochreous on the head and thorax, and cinnamon brown on the abdomen, with darker borders at the segments. The females, that probably belong to this species, are of a much lighter colour, yellowish ochraceous, the head and pronotum as well as the nerves in the forewings more or less orange. In the ♂ the gonopods are curved downward towards the rather sharp tops, dorsally with a distinct hump. The sklerites around the anal apparatus strongly developed, bilobate at the lower edge. In the ♀ the dorsal spine at the ultimate abdominal segment is more distinctly curved upward than in *B. bicolorata* Dist. The coverings of the ovipositor reaching notably beyond this spine. Length of the ♂: $31\frac{1}{3}-32$ mm; of the ♀: $37\frac{2}{3}-41\frac{1}{4}$ mm. — 4 ♂♂ holo- and paratypes, and 7 ♀♀, allo- and paratypes, Kokoda, Papua, 1200 ft., April-September 1933, L. E. Cheesman, in the British Museum (Natural History).

Baeturia latifrons nov. spec. Fig. 42.

Greenish ochraceous, the abdomen, with the exception of the last two seg-

ments, green. Probably the green colour dominated in the living insect. In the structure of the male genitalia this species is somewhat similar to *B. humilis* m., and *B. minuta* m., because of the short and blunt protrusion of the upper apical edge of the ultimate segment. The shape of the gonopods, however, is very distinct from that in the species mentioned above. Contrary to the next species the tops of the gonopods are almost contiguous. — Length (of the ♂) : about 24 mm (the unique specimen is set, and one of the wing tops is badly damaged). — Ifar, Northern New Guinea, December 1957, G. den Hoed, holotype.

Baeturia viridula nov. spec. Figs. 43-44.

Yellowish green throughout, only the anterior tibiae pale ochraceous. This species is very similar to the foregoing; in the ♂ the gonopods are notably longer and sharp pointed, diverging toward the tops. The oedagus shows a hammer-shaped top. The genital valve is set with very long, erect hairs at the underside. In the ♀ the protrusion at the upper apical edge of the ultimate ventral segment is pointed, with rather broad base. The lower lateral edge of the segment is more or less winding. The surface of the lower lateral part shows a distinct longitudinal carina at both sides. — Length of the ♂ : $21\frac{1}{3}$ -22 mm, of the ♀ : $23\frac{1}{3}$ - $23\frac{1}{2}$ mm. — Hollandia, November 1957, G. den Hoed, one ♀, paratype; Hollandia, 10 January 1958, R. T. Simon Thomas, one ♂ and one ♀, para- and allotype; Dojo, Northern New Guinea, April 1958, G. den Hoed, two ♂ specimens, holo- and paratype.

Baeturia phyllophora nov. spec. Figs. 45-46.

A very peculiar species by the costal area of the forewings being notably enlarged towards the apex, and by the structure of the oedeagus in the ♂. The colour is olivaceous green, the apical borders of the abdominal segments usually darkened, the anterior tibiae and the tarsi reddish. The ♂ genital segment shows some resemblance to that of *B. humilis* m., because of the short upper spine, but it shows no distinct hump at its lower lateral edge, and the gonopods in the present species are strongly compressed laterally, sharp pointed in posterior view, so, that from the ventral impressions on them only rather faint keels are left. The oedeagus has a very peculiar structure, showing a leaf like basal part, with a dorsal hook on it. In the (4) female specimens on hand the spines at the upper edge of the ultimate tergite show a slight tendency of being bent downward. Length of the ♂ : 18 mm; of the ♀ : 21 - $23\frac{2}{3}$ mm. — Mafulu, Papua, 4000 ft., January 1934, L. E. Cheesman, one ♂, holotype, and two ♀♀, allo- and paratype; Moroka, 1300 m, S. E. New Guinea, July-September 1893, Loria, one ♀, paratype; Kokoda, 1200 ft., October 1933, L. E. Cheesman, one ♀, paratype.

EXPLANATION OF THE FIGURES

Ultimate ventral segments, in lateral view (from the right) of:

Baeturia nasuta m. fig. 1: ♂; fig. 2: ♀.

Baeturia arabuensis m. fig. 3: ♂.

Baeturia bipunctata m. fig. 4: ♂.

Baeturia mamillata m. fig. 5: ♂; fig. 6: ♀.

Baeturia laminifer m. fig. 7: ♂; fig. 8: ♀.

Baeturia parva m. fig. 9: ♂; fig. 10: ♀.

Baeturia marmorata m. fig. 11: ♂; fig. 12: ♀.

Baeturia guttilinervis m. fig. 13: ♂; fig. 14: ♀.

Baeturia guttulipennis m. fig. 15: ♂.

Baeturia hirsuta m. fig. 16: ♂.

Baeturia rufula m. fig. 17: ♂; fig. 18: ♂, (skew view).

Baeturia vanderhammeni m. fig. 19: ♂.

Baeturia brongersmai m. fig. 20: ♂; fig. 21: ♀.

Baeturia tenuispina m. fig. 22: ♂; fig. 23: ♀.

Baeturia bicolorata Dist. fig. 24: ♂.

Baeturia viridis m. fig. 25: ♂; fig. 26: ♀.

Baeturia humilis m. fig. 27: ♂; fig. 28: ♀.

Baeturia minuta m. fig. 29: ♂.

Baeturia chinai m. fig. 30: ♂; fig. 31: ♀.

Baeturia ustulata m. fig. 32: ♂.

Baeturia stylata m. fig. 33: ♂; fig. 34: ♀.

Baeturia pallida m. fig. 35: ♂.

Baeturia toxopeusi m. fig. 36: ♂; fig. 37: ♀.

Baeturia digitata m. fig. 38: ♂; fig. 39: ♀.

Baeturia valida m. fig. 40: ♂; fig. 41: ♀.

Baeturia latifrons m. fig. 42: ♂.

Baeturia viridula m. fig. 43: ♂; fig. 44: ♀.

Baeturia phyllophora m. fig. 45: ♂; fig. 46: ♀.