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Three Genera of Papuan Passalid Coleoptera.

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With six figures in the text.

THE three genera of *Passalidae,* which form the subject of this paper, belong to the sub-family *Gnaphalocneminae* (see GRAVELY, 1913). During a visit to the Hamburg Naturhistorisches Museum I have been engaged on a revision of the genera of this subfamily; and I have to thank Prof. KRAEPELIN and the staff of the Entomological section of this museum for their kindness in permitting me to work there, and giving me free access to all their collections. Through the kindness of the authorities in the Berlin Kgl. Zoologisches Museum, the Deutsches Entomologisches Museum, the Stuttgart Kgl. Naturaliensammlung, and the British Museum, I have received from these museums fine series of specimens of *Gnaphalocneminae* for examination, and I take this opportunity of thanking them for their help.

For a complete revision of the species of this subfamily much more time that I can at present devote to it would be needed. But as a new genus is required for the species *trigonophorus,* ZANG, which was doubtfully referred by its author to the genus *Kaupiolus,* a fuller description of this than has yet been published appears to be called for. The genus *Hyperplesthenus,* KUWERT, is also very imperfectly described, so much so that HELLER has failed to recognise in the species *gracilis,* which he doubtfully referred to the genus *Labienus,* KAUP, another member of it; so as I have before me the types both of KUWERT's and of HELLER's species, as well as a specimen of a new species, it seems desirable that all three forms should be described together here. And to the account of these two genera I am adding an account of the small genus *Omegarius,* KUWERT, of which I have before me examples of both the known species, neither of which has yet been adequately described.

Genus Kaupioloides, n. gen.

Anterior margin of head approximately symmetrical; outer tubercles not acute, but scarcely truncate or complex, about as far from oneanother as

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from anterior angles of head; surface of anterior part of head level, without any trace of deep excavations on either side. Antennae with six well developed lamellae none of which are very long or slender. Dentition normal, complete and well-developed on both mandibles. Primary scars[1]) on mentum present, secondary scars[1]) not extending to posterior margin. Anterior intermediate and lateral areas of metasternum fused. Type, *K. trigonophorus* (ZANG 1905, p. 316). Only one species of this genus is yet known.

Kaupioloides trigonophorus (Zang).

Redescribed from four specimens from New Guinea, in the collection of the Deutsches Entomologisches Museum. Two of the specimens (including the type) are from the Toricelli Mountains in Kaiser-Wilhelms-Land, one is from Sattelberg, and one probably from Humboldt Bay.

Length 32—34 mm. The anterior margin of the labrum is straight or slightly concave; the sides are slightly convex; the angles are rounded, that of the left side being often somewhat more acute than that of the

Fig. 1.
Head of *Kaupioloides trigonophorus* (ZANG). × 4.

right. The upper tooth of both mandibles is more or less obsolete; the three terminal teeth and anterior lower tooth are conical, well-developed and perfectly distinct one from another on both sides. The mentum bears a row of hair-bearing punctures along its posterior margin; otherwise it is unpunctured between the primary scars, and punctured as usual laterally. The form of the anterior margin of the head has already been described in the definition of the genus; its surface is somewhat rugose, that of all the rest of the head being smooth, with or without a few broad punctures

[1]) Concerning the distinction between primary and secondary scars, and the other terms applied here to different parts, see GRAVELY, 1913 (pt. II).

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or grooves; the ridges joining the inner tubercles to oneanother and to the outer tubercles, form a single, more or less semicircular curve, the left arm of which is directed slightly inwards at its extremity, and all three sides of the frontal area are more or less concave; the apex of the left outer tubercle is bluntly and imperfectly bifid; the anterior angles of the head are of not more than 120°, and are very slightly prominent in perfectly fresh specimens; the canthus is more or less rounded or almost vertically truncate externally; the parietal ridges are lightly S-shaped. The prothorax is unpunctured above except in the scars; the marginal groove is widely incomplete across the middle in front and behind; the median groove is well-developed and complete behind, but not in front; the posterior angles of the lower side of the prothorax are closely punctured and clothed with long hair, the anterior angles being hairless and unpunctured. The scutellum is smooth and polished, except in the middle of the anterior margin, and in the extreme anterior angles, where it is finely punctured and pilose. The Mesothoracic episterna are punctured throughout, except in the posterior angles. The mesosternum is more or less strongly rugose, except in the angles behind the scars, which last are not very well defined. The anterior intermediate areas of the metasternum are not separated from the lateral areas, and both are very hairy and rugose; the posterior intermediate areas are hairless and polished, with a few large punctures. The posterior parts of the hind coxae are more or less rugulose or finely punctured. The sculpturing of the anterior abdominal sterna is variable; the posterior abdominal sterna are smooth. The elytra hairless, and are smooth except in the grooves, of which the outer are more strongly punctured than the inner.

Genus Hyperplesthenus, Kuwert.

Anterior margin of head more or less distinctly asymmetrical, outer tubercle of left side broader than that of right; left outer tubercle truncate or double, right similar or simply pointed; surface of anterior part of head level, without any trace of deep excavations on either side. Antennae with six lamellae, none of which are very long or slender; the first of them not always well developed. Dentition normal, complete and well-developed on both mandibles. No primary scars on mentum; secondary scars not very large, never reaching posterior margin, their posterior ends never widely separated and sometimes united. Anterior intermediate and lateral areas of metasternum fused. Type, *H. impar*, KUWERT.

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The three species of this genus may be recognised as follows:—

1. Head entirely smooth and polished; outer tubercles long and simply truncate . . . . . *H. glaber*, n. sp.
— Head more or less rugose in front; outer tubercles much shorter, not simply truncate 2
2. Both outer tubercles composed of two blunt denticles, scars of pronotum without punctures or hair . . . H. *impar*, KUWERT, 1898, p. 318.
— Inner denticle of right outer tubercle obsolete, scars of pronotum with hair-bearing punctures . . . . . *H. gracilis* (HELLER 1910, p. 16).

It is possible that *Laches infantilis* and *puerilis*, KAUP (1871, p. 48), also belong to this genus.

Hyperplesthenus glaber, n. sp.

Described from a single specimen from New Guinea in the British Museum collection.

Length 40,5 mm. The anterior margin of the labrum is slightly concave and the sides are straight and parallel; the angles are rounded, the left one being scarcely more prominent than the right. The upper tooth of both mandibles is obtuse and not very strongly developped;

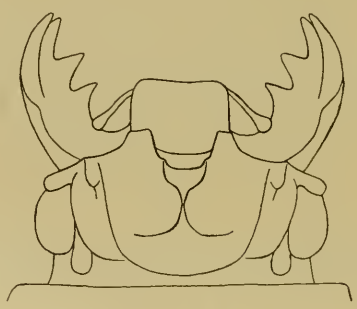

Fig. 2 A.

Head of *Hyperplesthenus glaber*, n. sp. ×4.

the three terminal teeth and the anterior lower tooth are conical, well-developed and perfectly distinct one from another on both sides. The scars of the mentum are broad and straight; they are not united behind in the specimen before me. Behind them a band of fine hair-bearing punctures extends transversely just in front of the posterior margin, uniting a pair of more coarsely punctured areas which occupy the posterior angles of the mentum. The remaining surface of the mentum is polished

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and unpunctured. The upper surface of the head is smooth, polished and unpunctured; the outer tubercles are strongly produced and broadly truncate, the left much broader than the right; the ridge joining them to the inner tubercles is very strongly developed. The inner tubercles are large, and somewhat compressed laterally. The anterior angles of the head are obtuse, and the outer ends of the canthus rounded. The central tubercle is laterally compressed. The parietal ridges are very indistinct; they are directed backwards near their origin from the central tubercle, but bend forwards laterally. The prothorax is smooth and polished above, except in the scars which contain hair-bearing punctures; the median groove is very strongly developed, and practically complete in front; the marginal groove is widely incomplete across the middle before and behind. The anterior angles of the lower side of the prothorax are punctured along the outer margin only; the posterior angles are closely punctured and very hairy throughout. The scutellum bears a distinct median groove, with a few large punctures on the disc on either side of it, as well as finer ones in the anterior angles. The Mesothoracic episterna are coarsely but somewhat sparcely punctured, except in the posterior angles which are smooth and polished. The mesosternum is smooth and polished, except in the scars which are somewhat coarsely but irregularly and indistinctly punctured. The fused lateral and anterior intermediate areas of the metasternum are rugose and very hairy; the posterior intermediate areas are practically unpunctured. The posterior parts of the hind coxae are rugose. The abdominal sterna are smooth and polished. The elytra are hairless and unpunctured except in the grooves, all of which are somewhat obscurely punctured.

Hyperplesthenus impar, Kuwert.

Redescribed from the type specimen from Mt. Yule, New Guinea, in the Stuttgart Kgl. Naturaliensammlung, and from a single worn specimen from German New Guinea in the collection of the Berlin Kgl. Zoologisches Museum.

Length 42 mm. The angles of the labrum are somewhat less broadly rounded than in the preceeding species, which this species resembles in all points not mentioned in the following description. The scars of the mentum are more or less •-shaped, and strongly curved, and may be united behind to form together a ω-shaped figure as in the genus *Omegarius,* KUWERT; the anterior as well as the posterior parts of the areas outside these scars, may bear large hair-bearing punctures. The outer tubercles of the head are much shorter than in *H. glaber,* and that of the right side is almost as broad as that of the left; instead of being simply truncate

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the upper and inner angle of each is produced, in the only unworn specimen before me, to form a small blunt denticle; the ridges joining the outer to the inner tubercles are sometimes indistinct, especially on the right side. The whole of the anterior margin of the head, together with the canthus, is strongly rugose. The median groove of the pronotum is

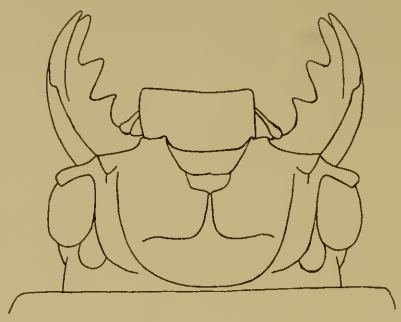

Fig. 2 B.

Head of *Hyperplesthenus impar*. KUWERT. × 4.

markedly incomplete in front, and the scars are smooth and hairless. The scutellum is less distinctly or not grooved in the middle line, and is unpunctured outside the usual punctured and pilose area in the middle of the anterior margin, which in the type specimen is very large. The unpunctured posterior part of the mesothoracic episterna is somewhat more extensive than in *H. glaber*. The scars of the mesosternum are perhaps a little smaller and deeper. The grooves of the elytra are unpunctured.

Hyperplesthenus gracilis (Heller).

Redescribed from two specimens (paratypes) from the Toricelli Mountains, Kaiser-Wilhelms-Land, New Guinea, and from one from the frontier between German and Dutch New Guinea; all in the Deutsches Entomologisches Museum.

Length 36—38 mm. This species resembles both the preceeding ones except in the following respects. The anterior margin of the labrum is not distinctly concave. The upper tooth of the mandibles, though very small, is somewhat more acute. The puncturing of the mentum is never more, and may be even less, extensive than in *H. glaber*; the scars are variable, being either •-shaped or almost straight, and may or may not be united behind. The upper surface of the head closely resembles that of *H. impar*, but the inner and upper angle of the right

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outer tubercle is obsolete, so that this tubercle appears to be simply pointed, and the head to be markedly asymmetrical. The ridges joining the inner tubercles to oneanother and to the outer tubercles are all obsolete or entirely absent. The rugosity of the anterior margin of the head is not quite so extensive as in *H. impar,* and does not extend on to the

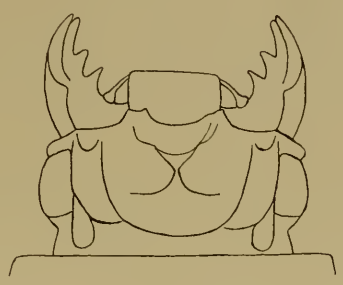

Fig. 2 C.

Head of *Hyperplesthenus gracilis* (HELLER). × 4.

canthus. The parietal ridges are straight, and extend directly outwards or a little forwards. The median groove of the pronotum may be either complete or incomplete in front; the scars contain hair-bearing punctures. The scutellum bears little or no trace of a median groove; it is punctured as in *H. glaber.* The mesothoracic episterna resemble those of *H. impar.* The scars on the mesosternum are absent or obsolete. The posterior intermediate areas of the metasternum may be smooth or more or less strongly punctured all over. The posterior parts of the hind coxae are almost entirely smooth. The elytra are unpunctured as in *H. impar.*

Genus Omegarius, Kuwert.

Anterior margin of head not markedly asymmetrical. Antennae with six well developed lamellae, all very long and slender. Dentition of mandibles variable; when reduced, the reduction is more marked on the left than on the right side. Scars on mentum semicircular, facing forwards, forming together a ω-shaped figure. Type, *O. pumilio* (KAUP).

KUWERT recognises two species of this genus, one from the Moluccas, and one from New Guinea; but the characters by which he distinguishes them are variable. I have seen a number of specimens from the Moluccas, New Guinea and New Brittain, some labelled with one name, and some

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with the other, and have not been able to find any constant difference between them. On the other hand, as soon as the mandibles were opened, a very marked difference became apparent between specimens from the Moluccas, western Dutch New Guinea and British New Guinea, and those from north (eastern) Dutch New Guinea, German New Guinea (with one exception), New Brittain, and the Salomon Islands. The specimens before me include one collected by VON ROSENBERG in Amboina, as was also the type of *O. pumilio* (KAUP), specimens of the same species determined by KUWERT as *O. pumilio,* and specimens of the other species determined by KUWERT as *O. minimus,* the latter being presumably co-types. So there can be no doubt as to the identity of the two species, which may be distinguished thus;—

1. Anterior lower tooth of both mandibles distinct and well developed. *O. minimus,* KUWERT, 1898, p. 313.
— Anterior lower tooth of left mandible absent, that of right mandible fused at base with lowest terminal tooth . . *O. pumilio* (KAUP), 1871, p. 50.

Omegarius minimus, Kuwert.

Redescribed from a fine series of specimens from New Brittain (N.-Bucht in Squally Island, Herbertshöhe in Matufi, and Gazelle Peninsula) from German New Guinea (Stephansort in Kaiser-Wilhelms-Land) and from the north of (eastern) Dutch New Guinea (Pauwi and Samberi). There is also, in the collection of the Berlin Kgl. Zoologisches Museum, a single specimen from Timput in the Solomon Isles, which may perhaps belong to a distinct local race. But it so closely resembles some members of the Squally Island series (Hamburg Museum collection) that I cannot be sure of this without seeing further specimens from the same locality.

Length 18,5—25,5 mm. The anterior margin of the labrum is slightly concave; the sides are straight and parallel; the angles are rounded, and the left one is somewhat more prominent than the right. The mandibles are symmetrical; the upper tooth of each is small and blunt, sometimes obsolete; the remaining teeth are all distinct, simple and well developed. The lateral parts of the mentum are punctured throughout; the scars are of the form characteristic of the genus, and are a little variable in detail. The upper surface of the head is polished, and is usually punctured in the hollows in front of the parietal ridges, but may be entirely unpunctured. Both the outer tubercles are triangular in section, and truncate distally, being terminated by three small denticles of which the uppermost is longer and sharper than the two lower, while the inner one of the latter is sometimes obsolete; the left outer tubercle is slightly

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larger than the right. The inner tubercles are well developped in fresh specimens. The margin of the canthus is more or less concave; when the concavity is very pronounced the anterior angles of the head and the external angle of the canthus are tooth-like, but this is not a constant nor even a usual characteristic of the species. The frontal area is usually about twice as broad as long, and rectangular or semi-circular; but in the eight specimens from Squally Island, which are of a uniformly large size and probably belong to a single colony, it is three or even four times as broad as long. The parietal ridges extend directly outwards from a little behind the apex of the central tubercle, and are curved backwards at their extremities. The upper surface of the prothorax is smooth and unpunctured, except in the scars, and as a rule in the anterior angles, where the extent of the puncturing is very variable, and on the whole greater in small specimens than in large ones; the median

Fig. 3 A.
Head of *Omegarius minimus*, KUWERT. × 4.

groove is distinct and practically complete, the marginal groove is widely incomplete both before and behind. The posterior angles of the lower surface of the prothorax are finely punctured and hairy, the punctures and hair being continued as a rule along the outer margin of the otherwise smooth and hairless anterior angles, especially in small specimens. The scutellum is smooth and unpunctured except in the middle of the anterior margin. The mesothoracic episterna are punctured above and along the anterior margin; behind they are smooth and polished. The mesosternum is smooth and polished except in the scars which, though somewhat variable, are usually well developed, and matt wholly or in part. The lateral areas of the metasternum are narrow, parallel-sided, finely and closely punctured; the intermediate areas are more coarsely and less closely punctured on the inner side, smooth and unpunctured on the outer. The posterior parts of the hind coxae are not strongly punctured; the abdominal sterna are more or less finely punctured in the scars. The elytra are hairless, and smooth except in the grooves, of which the outer are much more coarsely punctured than the inner.

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Omegarius pumilio (Kaup).

Redescribed from specimens from Amboina, Batjan, Ceram, Waigiou, „Malacca" (which must be a mistake for Molucca), Wendesi (western

Fig. 3 B.
Head of *Omegarius pumilio* (KAUP). × 4.

Dutch New Guinea), Fly River (British New Guinea) and Erima Wald in Kaiser-Wilhelms-Land (German New Guinea).

Length 19—22 mm. This species does not appear to differ from the preceeding in any constant character except the form of the mandibles described in the above key. The lamellae of the antennae appear to be on the whole a little slenderer, but the difference is not always very marked.

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