

Two interesting new millipeds of the genus *Thyropygus* from the mainland of southeast Asia (Spirostreptida: Harpagophoridae)¹⁾

RICHARD L. HOFFMAN

(With 8 figures)

Incidental to the examination of other kinds of millipeds in various European museums, I have had the opportunity to examine a considerable diversity of species belonging to the family Harpagophoridae. Already some information on various taxa has been published, but data concerning species of the genus *Thyropygus* have been retained for an eventual synopsis of that group.

Thyropygus is dominantly a Sumatra genus. Only a few species have been recorded (and not always convincingly) from western Java, and several - all members of the somewhat disjunct "Allevatus-Group" - from the former "Indochina" region. It is a matter of some interest to record from the mainland territory two undescribed species apparently referable to the "Erythropleurus-Group" which is rather nuclear for the genus and seemingly endemic to Sumatra. This occasion is taken to put these species on record, since completion of the planned synopsis remains a matter of the unforeseeable future.

One species was found in the Naturhistorisches Museum, Basel, and I thank Dr. U. RAHM and Miss C. UNTERNÄHRER for loaning it to me for study; the second is the property of the Zoologisches Museum, Hamburg, and the opportunity to borrow it continues my longstanding debt to Dr. G. RACK, curator of arachnids and myriapods in that institution.

The Malayan thyropygine fauna

As nearly as I can determine, 11 species referable to the tribe Thyropygini have been named from the Malay Peninsula (i.e., south of the 13° parallel). I have not so far restudied types of the species named by SINCLAIR in 1901, but judged from the very poor descriptions,

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the two new names *rubripes* and *dorsolineatus* proposed by that author seem to be based on anurostreptines.

In chronological order, these eleven names are cited below:

- Spirostreptus opinatus* KARSCH, 1881 (Tenassarim)
Spirostreptus regis POCOCK, 1889 (King Island)
Spirostreptus andersonii POCOCK, 1889 (Mergui)
Spirostreptus aterrimus POCOCK, 1889 (Mergui)
Spirostreptus perakensis POCOCK, 1892 (Perak)
Spirostreptus oatesii POCOCK, 1895 (Double Island)
Spirostreptus tavoiensis POCOCK, 1895 (Tavoy Island)
Thyropisthus pococki DEMANGE, 1961 (Johore: Gunong Pulai)
Thyropisthus evansi DEMANGE, 1961 ("Malay Peninsula: Bukit Vesar")
Cornugonus implicatus DEMANGE, 1961 (Malaya: Penang Hill)
Cornugonus floweri DEMANGE, 1961 ("Malaya: Bukit Jalor")

Some commentary on the status of these names will be of interest. DEMANGE (1961) considered *andersonii* to be a junior synonym of *opinatus*, which he referred to *Cornugonus*. Both *oatesii* and *tavoiensis* were placed in *Tuberogonus*. *S.regis* was based on a probably immature female and will remain an uncertainty until male topotypes are obtained. The male holotype of *S.perakensis* was apparently misplaced and could not be studied by DEMANGE in his revision of POCOCK's harpagophorid types (1960), but the small drawing of the gonopods published by POCOCK strongly suggests a form very similar to that of DEMANGE's recent *Thyropisthus pococki*. The locality cited for the latter name may possibly be in error, and might actually be Bukit Besar, a mountain in the Patani region of southernmost Thailand. Perhaps the same is true for "Bukit Jalor" which is possibly an error for Bukit Jala, likewise in Patani.

In a previous paper (1975) I suggested that *Thyropisthus*, as understood by DEMANGE in his 1961 paper, appeared to be heterogenous and perhaps not clearly distinguishable from *Thyropygus*. The status of a species-group for at least most of the Indochinese species (e.g., *hoffmani*, *ligulus*, *allevatus* and its races, *confusus*, *cuisinieri*, &c) seemed more appropriate instead. All of these taxa share the common feature of a very large tibial spine on the gonopod, which curves distad nearly to the level of the femoral spine, a trait also occurring in the three species referred to *Cornugonus*.

Perhaps future work will confirm the union of the "Allevatus-Group" of *Thyropisthus* with *Cornugonus*, resulting in a geographically cohesive assemblage. But several species now included in *Thyropisthus* (*pococki*, *evansi*, *aterrimus*) could just as well be extracted into a taxon of their own, characterized by the abbreviated gonocoxal folds, laterally with digitiform projections, and the reduction of the tibial spine.

In any case, reference to the pertinent literature shows that the species named in this paper are somewhat from all of the taxa mentioned above. One shows evident affinity with the Sumatran species *T.pachyurus* and *T.renschi*; the other appears quite isolated in any context.

Thyropygus weidneri n.sp. (Figs. 1-4)

Material: Male holotype (Zool.Mus.Hamburg) from "Johore, Süd-Malakka" Malaya, F. DIEHL leg., ded. 9.8.1910.

Diagnosis: Readily recognized from other known thyropygids by the two prominent small spines at the base of the femoral spine, on the anterior side; the median light middorsal band is perhaps also diagnostic.

Holotype: Adult male with 65 segments, \pm 115 mm in length (broken), 7,0 mm in maximum diameter. Original coloration faded, at present uniformly medium to dark brown, with labrum, legs, and terminal segment yellow; each metazonum with a rounded yellowish middorsal spot, giving impression of an interrupted median light line.

Head without modifications; eyes moderate in size, sub-reniform, the outer ends broadly rounded, ocelli in about 7 irregular rows, about 52 in all, not extending mesad beyond inner edge of antennal socket. Antennae short, articles 2-5 strongly clavate, almost triangular in outline. Mandible with small but distinct lobe on ventral margin. Praebasilare narrow, with small but deep notch at each end, accomodating pre-femoral processes of first leg pair.

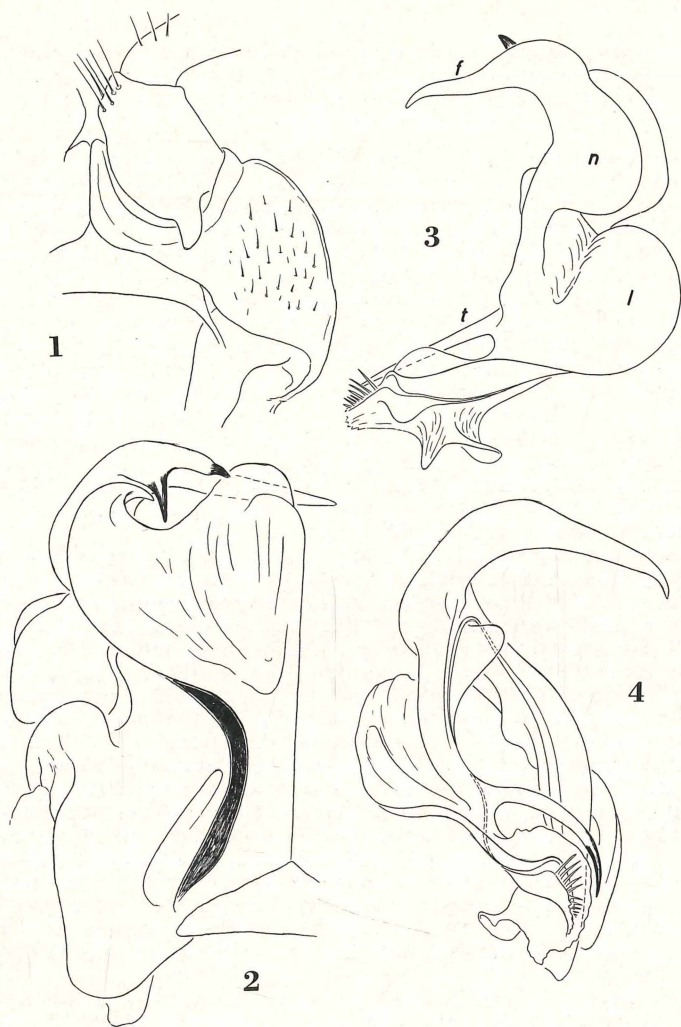
Collum unmodified, slightly narrowed laterally, ends rounded-truncate, a single groove setting of anterior margin, broadest toward anterolateral corner.

Segments smooth and polished, prozona with about a dozen very fine concentric striae, sutural groove small, sharply-defined, with minute longitudinal ridges; metazona smooth, with very fine ventrolateral striations. Sigilla visible through integument, typically forming a broad, irregular belt of about 5-7 spots in width, the spots largest anteriorly. Epiproct with small, acute, upturned projection. Hypoproct fused to preceding segment. Paraprocts smooth, with moderately well-defined mesal margins.

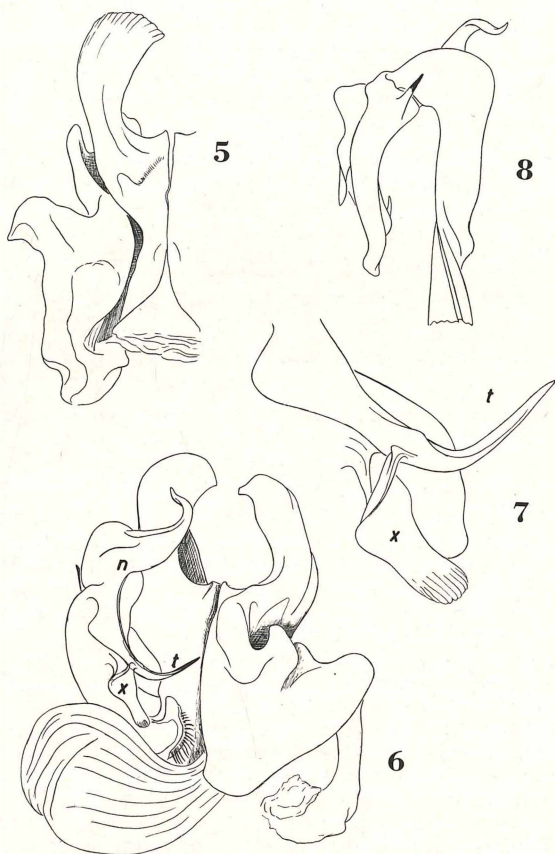
Sterna smooth and polished. Legs relatively short, only tarsi and tibiae visible from above when legs are extended laterad, coxae of anterior and posterior pairs not markedly dissimilar, setation of legs reduced: coxae, prefemora, and femora typically with a single ventrodiscal hair, postfemora and tibiae lacking setae, tarsi generally with two ventrodiscal setae and a single supra-apical spine above the claw. Tibial pads moderate in size, present back to about 55th segment, postfemoral pads small, disappearing just beyond middle of body.

First pair of legs as illustrated (Fig. 1), sternum small, coxae not fused medially, oral surface with sparse, evenly dispersed setules, prefemur with small, digitiform process and apicomedian field of long setae.

Gonopods of the form shown in Figs. 2-4. Coxal fold rounded distally, produced laterally into a recurved hook. Telopodite typical for the Erythropleurus-Group, nodus (n) moderate in size, with large medially directed femoral spine (f) having two smaller acute spines at its base on the anterior side (Fig. 2); a large rounded lateral lobe (l); and a single long slender tibial spine (t). Apical region beyond lobe abbreviated, a subterminal circular crest of very thin hyaline tissue near end of prostatic groove, latter with about ten colorless prostatic blepharochetae.



Figs 1-4: *Thyropygus weidneri* n.sp. Fig. 1: sternum, coxa, and prefemur of ist pair of legs, anterior side. - Fig. 2: Left gonopods, anterior aspect, showing form of coxal folds and two basal spines on anterior side of femoral spine. - Fig. 3: Telopodite of left gonopod, posterior aspect (f, femoral spine; f, lateral lobe of tibial region; t, tibial spine; n, nodus). - Fig. 4: Telopodite of right gonopod, oblique caudo-mesal aspect. All drawings from holotype.



Figs 5-8: *Thyropygus peninsularis* n.sp. Fig. 5: Left gonopod, anterior aspect, telopodite removed. - Fig. 6: Gonopods, oblique caudo-lateral aspect with some musculature indicated, left telopodite removed. - Fig. 7: tibial region of right telopodite, enlarged, showing tibial spine and accessory process (X) characteristic of this species. - Fig. 8: telopodite of left gonopod, lateral aspect, showing small acute (?) postfemoral spine distad of oblique cingulum. All drawings from holotype.

Relationships: It is not possible at this time to identify the nearest relative of this species -- affinities suggested by the form of the coxal folds are contradicted by structure of the telopodite. However, on balance I suspect considerable affinity with *T.renschi* and *T.pachyurus* rather than with the large, dark-colored species such as *weberi*, *erythropleurus*, &c. The pair of short acute spines at the base of the femoral spine is diagnostic for *T.weidneri*, as is also, perhaps, the color pattern.

Name: I take considerable pleasure in associating with this species the name of Prof. Dr. HERBERT WEIDNER, pre-eminent German entomologist, who for many years cared for the myriapod collection of the Zoologisches Museum Hamburg.

Thyropygus peninsularis n.sp. (Figs. 5-8)

Material: Male holotype and female paratype (Naturh.Mus. Basel) from "Thailand: NW Halbinsel, Kapa / Dr. H. BERNATZIK leg. 1936".

Diagnosis: Distinguished from all other known members of the genus by the presence of a hyaline, spatulate process (X) at base of tibial spine on the gonopod telopodite. Well-developed setation of the podomeres may also prove to be characteristic of this species.

Holotype: Adult male, \pm 120 mm in length (much broken and curved), maximum diameter of metazona 9.5 mm. Original coloration disappeared, specimen at present mostly testaceous on pro- and metazona, with head, collum, and metazona reddish-brown, legs clear orange-yellow.

Head without special features; ocelli in 7 rows: 12, 11, 9, 9, 7, 6, 4 = 58. Antennae relatively short, barely extending caudal to level of 4th segment.

Collum of form typical for the genus, somewhat narrowed down the ends, where abruptly truncate, with strong anterolateral marginal groove and ridge, this region not lobed or produced anteriorly.

Segments smooth and polished except for fine striation on metazona, extending up to level of ozopores on some midbody segments, these striations not terminating in small marginal spines. Ozopores distinct, located in metazona and distinctly posterior to suture. Epiproct with small, short, slightly upturned dorsal projection. Hypoproct not fused to preceding segment. Paraprocts with moderately distinct definition of marginal flanges. Sigilla forming a broad band of 5-7 rounded spots, these largest at inner surface of suture, becoming smaller posteriorly, the belt occupying about half of the metazonal length.

Sterna smooth and polished. Legs relatively short, only the tarsi visible from above when legs are extended laterad; anterior coxae of each segment compressed, posterior coxae enlarged and subquadrate; coxae with 8-12 setae, prefemora with 4-6, femora with 1-3 in a median proximal row and two larger subapical setae; tarsi with typically six irregularly

placed ventral setae and one large + 3 small dorsal apical spurs. Ventral pads on postfemora and tibiae on all legs except first three pairs.

Gonopods of the form shown in Figs. 5-8. Coxal folds (Fig. 5) unmodified, apically the mesal fold is somewhat flattened and truncate, gonocoel relatively exposed, sternum well-developed, triangular. Lateral fold with a small projection subtending nodus when telopodite is in resting position (Fig. 6); nodus with large mesal spine, apically recurved distolaterad, and a much smaller (?) postfemoral spine on the lateral side, clearly separated from nodus by an oblique suture (Fig. 8). Apex of telopodite without particulars, but tibial region with a large flattened truncate hyaline projection (X) at base of tibial spine (Fig. 6, 7, X); tibial spine of moderate size (Fig. 6, t), not recurved proximal.

Relationships: I cannot at this time suggest any lines of close affinity between this species and others known to me. Despite the presence of the singular process "X", the form of the telopodite does not differ generically from that of *erythropleurus* and related species.

Comment: The place=name "Kapa" is presumably the same as that spelled Kapoe on modern maps, it is located on the west coast of the lower Thai peninsula at 9.35 N, 98.38 E.

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Address of the author:

Prof.Dr.RICHARD L. HOFFMAN, Radford University, Radford, Virginia 24142, U.S.A.

ZOBODAT - www.zobodat.at

Zoologisch-Botanische Datenbank/Zoological-Botanical Database

Digitale Literatur/Digital Literature

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