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***Rugilus* LEACH, subg. *Tetragnathostilicus* SCHEERPELTZ: Addenda.  
(Coleoptera: Staphylinidae, Paederinae)  
31st contribution to the knowledge of Staphylinidae \***

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**Abstract:** Following an earlier article on this subgenus of the genus *Rugilus* LEACH (ROUGEMONT 1987), the author describes six new species: *R. bagmaticolus* (Nepal), *R. gansuensis* (China), *R. latiparameris* (Nepal), *R. longiparameris* (Nepal), *R. schawalleri* (Nepal) and *R. smetanai* (Nepal). The synonymy of *R. paradoxus* BERNHAUER with *R. gracilis* EPPELSHEIM is established.

**Key words:** Coleoptera, Staphylinidae, Paederinae, *Rugilus*, *Stilicus*, *Tetragnathostilicus*, new species, new synonymy, systematics, zoogeography.

### Introduction

Shortly after sending my 1987 article to press I received a further 114 specimens belonging to this group of the genus *Rugilus* LEACH from A. Smetana (Ottawa) and I. Löbl (Geneva). More recently, W. Schawaller sent me 50 exs. collected by J. Martens and himself in Nepal, and a few further exs. were provided by P. Morvan and my own inspections. The new material constitutes the largest body of data available so far, and has proven to contain six new species which are described below. Some discussion of the distribution and probable origin of the group is attempted.

Three references were omitted from my earlier review of the group: *R. prolongatus* SOLSKY, which, having not seen, I did not know belongs by definition if not phyletically to this group, and *R. prodoni* COIFFAIT and *R. paradoxus* BERNHAUER, the descriptions of which I had overlooked. These are included here so that together the two papers cover all the known taxa of *Tetragnathostilicus*.

It is possible that *R. reitteri* BERNHAUER 1938 described from "NW China, Chinkiang" is also a *Tetragnathostilicus*, but I have not yet seen this species.

A majority of the exs. in series of some species (*R. bagmaticolus* spec. nova, *R. latiparameris* spec. nova, *R. longiparameris* spec. nova, *R. nepalensis* SCHEERPELTZ, *R. prodoni*, *R. quadridentatus* COIFFAIT) received from A. Smetana in February 1986 showed a more or less (sometimes very) intense coppery, blue, or purple metallic reflex on all or parts of the dorsal surfaces, especially the elytra. The specimens were then

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\* (including Results of the Himalaya Expeditions of J. Martens no. 220. – J.M. sponsored by Deutscher Akademischer Austauschdienst and Deutsche Forschungsgemeinschaft.

between one and five years old (but had perhaps only recently been dry mounted). At the time of writing (June 1990) the reflex has faded or disappeared from most of the specimens. These had been stored normally, in complete darkness. This seems to confirm earlier suppositions (ROUGEMONT 1988) that the metallic colours in these and other *Stilicina* are fugitive as a result of long term post mortem alterations.

Some of the species (e.g. *R. gogonensis* COIFFAIT) show considerable variability, especially in the size of the elytra, but also in the proportions and even the shape of the head, and most of the new species resemble each other very closely in all but the sexual characters. I have therefore not attempted to update the 1987 key, but the dichotomies therein have been used to determine the systematic order of species that follows.

### ***Rugilus prolongatus* (SOLSKY)**

*Stilicus prolongatus* SOLSKY 1874: 187

*Stilicus* p. ssp. *khalash* ROUGEMONT 1988: 515

This remarkable species is by virtue of the dentition of the labrum a *Tetracanthostilicus* but it differs notably from all other members of the subgenus by its facies and by the very fine, sparse puncturation of the elytra. In these respects it resembles the two sympatric *Rugilus* (s.str.) species *R. capitalis* GEMMINGER & HAROLD and *R. caporiaccoi* BERNHAUER. It is no doubt significant that this 'link' form between the Palearctic *Rugilus* s.str. and *Tetragnathostilicus* occurs at the juncture of the two groups' ranges (see map 1). The nominate form is known from Uzbekistan and Tadzhikistan, the subspecies from the Chitral area of North Pakistan.

### ***Rugilus gracilis* (EPPELSHEIM)**

*Stilicus gracilis* EPPELSHEIM 1895: 63.

*Stilicus paradoxus* BERNHAUER 1936: 242 syn.n.

*Stilicus gracilis*: ROUGEMONT 1987: 214

Bernhauer's description of *S. paradoxus*, which I had overlooked, and the specimen's provenance (Simla), leave no doubt that it belongs to *R. gracilis*.

**M a t e r i a l   e x a m i n e d** (58 exs.): INDIA: Garhwal; PAKISTAN: Hazara, Shogrun 2400 m, 3.VI.1983, leg. Besuchet & Löbl; Swat, above Utrot, 13.V.1983, 2500-2600 m, leg. Besuchet & Löbl; Swat, Malam Jabba, 18.V.83, 2500-2600 m., leg. Besuchet & Löbl; Chitral, V.1983, leg. Besuchet & Löbl.

These specimens extend the species' range to the North and West into Pakistan, almost to the border of Afghanistan (maps 1, 2). This range covers the whole of the western Himalaya. In the North-West it touches those of *R. prolongatus khalash* and of *R.* (s.str.) *caporiaccoi*, but *R. gracilis* is the only member of the subgenus known to occur between Swat and West-Central Nepal.

### ***Rugilus gansuensis* spec. nova**

**H o l o t y p e** (♂) & **1 P a r a t y p e** (♀): CHINA, S-Gansu Province, Maijishan, ca. 1500 m., sifted leaf litter under shrubs by stream, VIII.1986, leg. G. de Rougemont (coll. Rougemont).

**Length:** 5.4-5.6 mm. Macropterous (holotype) or micropterous (Paratype). Head and pronotum black with a slight aeneous reflex; elytra brown; abdomen pitchy black with aeneous reflex; antennae and mouthparts rufo-testaceous; legs pale testaceous.

Proportions of holotype: Length of head: 68; breadth of head: 72; diameter of eye: 29; length of antenna: 105; length of pronotum: 64; breadth of pronotum: 53; length of elytron: 92; breadth of elytra: 81; at level with apex of scutellum: 78; metatarsus: 63; metatarsomeres: I: 18; II: 12; III: 10; IV: 7; V: 17.

Head slightly transverse, sides contracted to form with base an angle slightly more acute than perfect arc; sculpture as in *R. gracilis* and all micropterous spp., interstices forming coarse longitudinal rugae. Labrum with inner denticles much longer than lateral pair, comparable with *R. bhotius* (ROUGEMONT 1987, Fig. 4), albeit with outer denticles slightly larger and more widely separate from inner denticles.

Pronotal sculpture comparable with that of *R. quadridentatus*, scarcely longitudinally confluent, leaving broad, irregular midlongitudinal shiny callus in basal half.

Punctuation of elytra clear, deep, comparable with that of *R. gracilis* but somewhat closer, the interstices sharper, intermediate between that of *R. gracilis* and *R. schawalleri*.

Male: Posterior margin of sternite VII unmodified, but apico-median area smooth and impunctate on a square area extending to 1/3 of length of sternite, limited on either side by small carina (Fig. 9); sternite VIII deeply emarginate. Aedeagus: Fig. 1 (specimen slightly immature, so median lobe shrivelled, its outline lost); ventral blade strongly laterally compressed.

Female: The paratype is a larger individual than the holotype, particularly in the proportions of the head and pronotum: Length of head: 77; breadth of head: 83; length of pronotum: 69; breadth of pronotum: 60. Also, the insect is micropterous: the hind wings are reduced to a total length of half that of the elytra, 1/3 as broad as long, and the elytra are smaller (length: 82; breadth: 80; at level with apex of scutellum: 70), fairly strong contracted near humeral angles, although less so than in many other micropterous forms.

The paratype agrees with the holotype in all other respects: denticulation of the labrum, sculpture, relative proportions, and lengths of tarsi and antennae. For these reasons, and despite the striking difference in appearance due to microptery, I think it very unlikely that it belongs to a different taxon. It is also assumed that both forms, fully winged and micropterous, may be expected to occur in either sex.

The macropterous form falls in the 1987 key between *R. gracilis* and *R. morvani* ROUGEMONT. It is distinguished at first glance from the former by the incomplete mid-longitudinal band of the pronotum, from the latter by the unicolorous elytra. The micropterous form, by virtue of the pronotal sculpture, falls between *R. dorjulensis* COIFFAIT and the very variable *R. gogonensis*, to which it appears to be most closely related.

### ***Rugilus morvani* (ROUGEMONT)**

*Stilicus morvani* ROUGEMONT 1987: 215. Type locality: S Dhaulagiri Range.

**Material examined:** 2♂♂, 6♀♀: NEPAL, Parbat District, Ghoropani Pass N slope, 2750 m, 5.X.1983, leg. Smetana & Löbl (coll. Smetana); 5 exs.: NEPAL, Taplejung District, Omje Kharka NW Yamputhin, mature mixed broad-leaved forest, 2300-2500 m, 1.-6.V.1988, leg. Martens & Schawaller (Mus. Stuttgart).

Ghoropani Pass lies at no great distance from the type locality, but the series from Taplejung District in East Nepal considerably extends the known range of this species, and lends support to the view that the following new species, *R. smetanai*, merits full

specific status. The shape of the ventral blade is identical in exs. of *R. morvani* from all three localities, exs. from Taplejung have a blue metallic reflex on parts of the elytra and abdomen.

In the original diagnosis and key not enough emphasis was put on the bicolorous elytra as the character which most easily serves to distinguish these two species from all others in the subgenus. The extent of the lateral brown areas varies, they may cover more than half the area of each elytron, or be more or less broadly interrupted before the postero-lateral angles.

### ***Rugilus smetanai* spec. nova**

**H o l o t y p e** (♂): NEPAL, Manang District, For. W Bagarchhap 2250 m., 22.IX.83, leg. Smetana & Löbl (coll. Smetana). - **P a r a t y p e s**: 3♂♂, 7♀♀: same data as holotype; 1♀: NEPAL, Manang District, Latha Manang W Bagarchhap, 2400 m., 24.IX.83, leg. Smetana & Löbl (holotype & 8 paratypes in coll. Smetana; 3 paratypes in coll. Rougemont); 1♂: NEPAL, "138 Manang District, Marayandi, 2200 m, oberhalb Bagarchhap, *Acer-Quercus* Mischwald, 12.-13.Apr.80, Martens & Ausobsky"; 1♀: NEPAL "161 Mustang Distr., S. Lethe, 2450-2600 m., artenreicher Laubmischwald 30.Apr.-1.May 1980, Martens & Ausobsky" (Mus. Stuttgart).

This new species is identical in all respects, including the male secondary sexual characters, with *R. morvani*. The shape of the ventral blade of the aedeagus is however quite different (Fig. 2, cf. ROUGEMONT 1987, Fig. 11)

Macropterous. Proportions of holotype: Length of head: 77; breadth of head: 82; diameter of eye: 29; antenna: 137; length of pronotum: 71; breadth of pronotum: 62; length of elytron: 100; breadth of elytra: 88; breadth at level with apex of scutellum: 82; metatarsomeres: I: 18; II: 12; III: 9; IV: 7; V: 13.

I originally assumed that *R. smetanai* was a localised subspecies of *R. morvani*, but the constancy of the shape of the ventral blade in both species over a considerable range inclines me to give the new form full specific status.

### ***Rugilus nepalensis* (SCHEERPELTZ)**

*Stilicus nepalensis* SCHEERPELTZ 1976: 118. Type locality: Thodung.

*Stilicus nepalensis*: ROUGEMONT 1987: 217.

**M a t e r i a l e x a m i n e d**: 3♀♀: NEPAL, Khandbari Distr., Induwa Khola Valley 2800 m., 15.V.84, leg. Smetana & Löbl (coll. Smetana; 1 ex. in coll. Rougemont).

These exs. agree in all respects with the diagnosis of the holotype, including the characteristically long metatarsi. One individual has elytra with a strong blue reflex which persists at the time of writing.

### ***Rugilus longiparameris* spec. nova**

**H o l o t y p e** (♂): "NEPAL, Khandbari District, "Bakan" W of Tashigaon 3200 m, 5.IV.1982, A. & Z. Smetana" (coll. Smetana). - **P a r a t y p e s**: 2♂♂, 15♀♀: same data as holotype; 1♂, 3♀♀: NEPAL, Khandbari District, above Tashigaon, 3500 m, 6.IV.1982, leg. A. & Z. Smetana; 1♀: NEPAL, Khandbari District, above Sheduwa 3000 m, 2.IV.1982, leg. A. & Z. Smetana (coll. Smetana; 3 paratypes in coll. Rougemont).

This new species most closely resembles *R. latiparameris* spec. nova and *R. bagmaticolus* spec. nova, to which it is phyletically closest.

Proportions of holotype: Length: ca. 5.2 mm. Length of head: 78; breadth of head: 83; diameter of eye: 32; length of antenna: 152; length of pronotum: 71; breadth of pronotum: 64; length of elytron: 71; breadth of elytra: 70; at level with apex of scutellum: 60; length of metatarsus: 72; metatarsomeres: I: 25; II: 13; III: 10; IV: 8; V: 16.

Micropterous. Labral denticles subequal in length, almost equally spaced. Pronotal sculpture coarsely longitudinally confluent.

Male: Sternite VII unmodified; sternite VIII broadly, accurately excised. Aedeagus: Fig. 3, apex of ventral blade much longer than in related species.

The distinctly transverse head, subequal labral denticles and fairly long metatarsi make this species run to *R. nepalensis* in the 1987 key. It therefore also closely resembles *R. latiparameris* and *R. bagmaticolus*, described below. *Rugilus longiparameris* differs from *R. nepalensis* by the slightly more equally spaced and more acicular labral denticles, the pronotum which is less parallel sided, the sides more strongly contracted posteriorly, as in the following two species, generally lesser size with proportionally smaller elytra, shorter metatarsomeres, the unmodified male sternite VII, and the quite different aedeagus. It closely resembles the ♂ paratype of *R. latiparameris*, differing significantly only in the clearer elytral puncturation (almost comparable with *R. schawalleri*), and in the sexual characters. It can only be distinguished from *R. bagmaticolus* by the marginally coarser pronotal sculpture, clearer elytral puncturation, by the more broadly excised male sternite VIII, and by the longer apex of the aedeagal ventral blade.

### ***Rugilus bagmaticolus spec. nova***

**H o l o t y p e** (♂): "NEPAL, Prov. Bagmati, Burlang Banjyang 2600 m, 5.IV.81, Löbl & Smetana" (Mus. Geneva). - **P a r a t y p e s**: 1 ♀: same data as holotype; 2 ♀ ♀: NEPAL, Prov. Bagmati, Gul Banjyang 2600 m, 6.IV.1981, leg. Löbl & Smetana; 1 ♀: NEPAL, Prov. Bagmati, Malemchi, 2900 m, 14.IV.1981, leg. Löbl & Smetana (Mus. Geneva; 1 paratype in coll. Rougemont); 8 ♂ ♂, 8 ♀ ♀: NEPAL, Kathmandu Distr., Sivapuri Dara, 2520 m, 29.IV., 30.IV., 1.V., 3.V.1985, leg. A. Smetana; 1 ♂, 1 ♀: NEPAL, Prov. Bagmati, Gul Bhanjyang, 2600 m, 8.IV.1981, leg. Smetana & Löbl (coll. Smetana; 3 paratypes in coll. Rougemont).

This new species is closest to the following, *R. latiparameris* and to *R. longiparameris*, described above.

Length: ca. 5.5 mm. Micropterous. Body entirely black, upper surface, especially elytra and abdomen frequently with a metallic coppery, blue or purple reflex in fresh specimens; mouthparts, antennae and legs rufo-testaceous, labrum broadly infuscate.

Proportions of holotype: Length of head: 79; breadth of head: 86; diameter of eye: 35; length of antenna: 141; length of pronotum: 74; breadth of pronotum: 66; length of elytron: 69; breadth of elytra: 70; breadth at level with apex of scutellum: 60; metatibia: 91; metatarsomeres: I: 22; II: 16; III: 11; IV: 9; V: 16.

Head orbicular, slightly transverse, temples and base forming almost perfect arc. Labrum with inner and outer denticles sub-equal, joined at base (cf. ROUGEMONT 1987, Figs. 7, 8).

Pronotum broadest near anterior angles, sides convergent to postero-lateral angles, sculpture coarsely longitudinally confluent, like that of head, leaving small shiny mid-longitudinal callus near base.

Elytra small, trapezoid, sculpture rather confused, punctures shallow and irregular.

Male: Sternite VII unmodified; sternite VIII (Fig. 10) shallowly emarginate. Aedeagus: Fig. 4.

*Rugilus bagmaticolus* falls in the 1987 key between *R. nepalensis* and *R. brahmanus*: Metatarsi equal in length to pronotum. It is a slightly smaller insect than *R. brahmanus* (cf. proportions of *R. brahmanus* - ROUGEMONT 1987: 212), and differs in its longer tarsi, smaller elytra with less uneven surface, the punctures shallow but more evident, a less elongate pronotum, and less transverse head. *Rugilus bagmaticolus* resembles the following new species even more closely (see description and comparison below).

***Rugilus latiparameris* spec. nova**

**H o l o t y p e** (♂): "NEPAL, 3000 m, Kali Danda Massif, V.1987, P. Morvan leg." (coll. Rougemont). - **P a r a t y p e s**: 1♂, 1♀: NEPAL, Khandbari District, Ridge NE Mangmaya 2800 m, 7.IV.1984, leg. Smetana & Löbl (coll. Smetana).

This new species falls between *R. nepalensis* and *R. brahmanus* in the 1987 key: metatarsi as long as pronotum, first tarsomere shorter than first antennomere; narrow, relatively parallel-sided pronotum without trace of median callus, its sculpture shallow, rather confused; elytra longer than pronotum; labral denticles sub-equal, bases of inner and outer denticles fused.

Proportions of holotype: Length of head: 85; breadth of head: 89; diameter of eye: 32; length of antenna: 150; length of pronotum: 73; breadth of pronotum: 62; length of elytron: 84; breadth of elytra: 73; metatarsus: 61; metatarsomeres: I: 19; II: 12; III: 9; IV: 7; V: 14.

*Rugilus latiparameris* spec. nova resembles *R. nepalensis* most closely in external characters, principally in the long tarsi and first tarsomere, and in the relatively large elytra which are longer than the pronotum, but differs in the head which is more constricted posteriorly, the unmodified male sternite VII, and the aedeagus.

From *R. brahmanus* it differs by the longer tarsi, larger elytra with less confused sculpture, as well as by the characters used in the key.

This new species also closely resembles *R. schawalleri*, described below, differing mainly in its more constricted, less orbicular head, in the less clearly marked elytral puncturation, longer tarsi, and quite different aedeagus.

The aedeagus is similar to that of *R. bagmaticolus*, to which *S. latiparameris* is probably most closely related. It differs from *R. bagmaticolus* in the less orbicular head, narrower, more parallel-sided pronotum with less marked angles (sides distinctly convergent behind anterior angles in *R. bagmaticolus*), longer tarsi, larger elytra, and much deeper emargination of male sternite VIII.

**Variability:** The holotype differs from the paratypes in the slightly different outline of the ventral blade (Figs. 5, 6), and in the almost parallel-sided elytra with prominent humeral angles (slightly more trapezoidal in paratypes), although all specimens are micropterous. The male paratype has depigmented, brown elytra, the female has a blue metallic reflex on elytra, as have both paratypes on the abdomen (elytra and abdomen black in holotype).

***Rugilus schawalleri* spec. nova**

**H o l o t y p e** (♂): "NEPAL, Sankhuwa Sabha District, above Paha Khola 2600-2800 m, *Quercus semecarpifolia*, *Rhododendron*, 31 May to 3 June 88, Martens & Schawaller". - **P a r a t y p e s**: 1♂, 3♀: same data as holotype (holotype & 2 paratypes in Mus. Stuttgart; 2 paratypes in coll. Rougemont).

This new species appears to be closest to *R. brahmanus*. It is best characterised by the unusual aedeagus, which bears some resemblance to that of *R. malaisei* SCHEERPELTZ from the Burma-China border.

Length: ca. 5.7 mm. Micropterous. Head and pronotum black; elytra and abdomen dark brown; all appendages reddish-brown.

Proportions of holotype: Length of head: 82; breadth of head: 87; diameter of eye: 34; length of antenna: 138; length of pronotum: 76; breadth of pronotum: 65; length of elytron: 72; breadth of elytra: 72; at level with apex of scutellum: 65; metatarsus: 70; metatarsomeres: I: 24; II: 13; III: 10; IV: 8; V: 15.

Head suborbicular, slightly transverse, temples and base forming regular arc. Sculpture of pronotum coarsely longitudinally confluent, like that of head, leaving no trace of median impunctate band or callus. Punctuation of elytra fairly clear, deep, comparable with that of *R. quadridentatus* and *R. gansuensis*, not shallow and confused as in *R. gogonensis* or *R. bhotius* and other micropterous species.

Male: Sternite VII unmodified; sternite VIII (Fig. 11) with deep triangular emargination. Aedeagus: Fig. 7, ventral blade broad, apex strongly deflexed, pointed, upper edge sharply notched above apical hook; lateral plates long, slender, feebly sclerotised, apex of dorsal plate strongly deflexed between them.

This new species runs in the 1987 key to *R. brahmanus*, described on the basis of a single female from Bhutan. It differs from our descriptions of that species by its smaller size, total absence of a median callus on the pronotum, and the clear elytral punctuation (shallow and confused in *R. brahmanus*).

I have pleasure in dedicating this new species to one of its discoverers, Dr. Wolfgang Schawaller.

***Rugilus prodoni* (COIFFAIT)**

*Stilicus prodoni* COIFFAIT 1982: 301. Type locality: Kalingchok Massiv near Barabhise.

**M a t e r i a l e x a m i n e d**: 2♂♂, 5♀♀: NEPAL, Prov. Bagmati, Yardang Ridge NE Barabhise 3250 m, 5.V.1981, leg. Löbl & Šmetana (coll. Šmetana; 2 exs. in coll. Rougemont).

*Rugilus prodoni* was described from a single female. The new material agrees with the original description, and its provenance supports the determination.

Proportions (of ♂ in coll. Rougemont): Length of head: 78; breadth of head: 80; diameter of eye: 30; length of antenna: 133; length of pronotum: 70; breadth of pronotum: 57; length of elytron: 70; breadth of elytra: 68; at level with apex of scutellum: 58; metatarsomeres: I: 22; II: 14; III: 10; IV: 8; V: 16.

Male: Sternite VII unmodified; sternite VIII moderately deeply emarginate. Aedeagus: Fig. 8, apex of ventral blade securiform, of characteristic profile.

This species falls between *R. bhotius* and *R. quadridentatus* in the 1987 key. The unmodified sternite VII likens it to *R. bhotius*, but the conformation of the labrum (cf.

ROUGEMONT 1987, Fig. 5), the pronotal sculpture, and the aedeagus show that it is closer to *R. quadridentatus*. It differs from both these species by the elytra with more reduced humeral angles and less confused sculpture, the punctures being deeper and more clearly visible.

### ***Rugilus quadridentatus* (COIFFAIT)**

*Stilicus quadridentatus* COIFFAIT 1975: 174. Type locality: Goropani.

*Stilicus quadridentatus*: ROUGEMONT 1987: 217.

**M a t e r i a l e x a m i n e d :** 6♂♂, 4♀♀: NEPAL, Parbat Distr., Ghoropani Pass 2700-3100 m, 5.-9.X.1983, leg. Smetana & Löbl; 1♀: Nuwakot Distr., between Ghotpa and Thare Pati 3200 m, 23.-26.IV.1985, leg. A. Smetana; 5♀♀: NEPAL, Prov. Bagmati, below Thare Pati, 3300 m, 10.IV.1981, leg. Löbl & Smetana; 4♀♀: Ibidem, 3400 m, 13.IV.1981; (coll. Smetana; 4 exs. in coll. Rougemont); 5♀♀: NEPAL, Gul Banjang (in Mus. Geneva); 2♂♂: NEPAL, "230 Gorkha Distr., Chuling Khola Djongshi Kharka, 5.Aug.1983, Martens & Schwallier"; 1♂: "232, Gorkha Distr., Chuling Khola 3000-3400 m, *Abies-Quercus*, 3.Aug.1983, Martens & Schwallier"; 1♀: "233A, Gorkha Distr., Chuling Khola, Meme Kharku, 5.-6.Aug.1983, Berlese, Martens & Schwallier"; 1♀: "171, Parbat Distr. zwischen Chitra und Ghandring, Chitre, Seite des Passes, *Alnus, Quercus, Rhodod.*, Martens & Ausobsky 6.Mai.1980"; 1♂ & 1♀: "231, Gorkha Distr., Chuling Khola, Djinshi Kharka, 4.-5.August.1987, *Abies/Alnus*, Martens & Schwallier" (Mus. Stuttgart).

### ***Rugilus gogonensis* (COIFFAIT)**

*Stilicus gogonensis* COIFFAIT 1978: 131. Type locality: Gogona

*Stilicus gogonensis*: ROUGEMONT 1987: 218.

**M a t e r i a l e x a m i n e d :** 1♂: NEPAL, Khandbari District, Goru Dzire Dara W slope 3600 m, 9.IV.1984, leg. Smetana & Löbl (coll. Smetana); 1♂, 3♀♀: NEPAL, Taplejung District, Grat Lasse Dhara und Alm Lassethas 3000-3300 m, *Abies-Rhodod.* 5.-7.IX.1983, leg. Martens & Dean; 23 exs.: NEPAL: Taplejung District, upper Simbua Khola Valley near Tseram 3250-3350 m, mature *Abies-Rhododendron* forest, 15.V.1988, leg. Martens & Schwallier; Ibidem, ascent to pasture Lassetham, 3000-3500 m, mature *Tsuga-Rhododendron* broad-leaved forest 15.V.1988, leg. Martens & Schwallier; Ibidem, pasture, Lassetham NW Yamputhin, 3000-3500 m, mature *Abies-Rhododendron* forest, 6.-9.V.1988, leg. Martens & Schwallier; Sankhua Sabha District, Thudam, mixed forest mainly *Betula-Rhododendron*, 3350-3650 m, 25.-27.V.1988, leg. Martens & Schwallier (Mus. Stuttgart).

## **Adumbration of a classification of the Eurasian *Rugilus* sensu lato. - Status and distribution of *Tetragnathostilicus* SCHEERPELTZ.**

All the Eurasian species currently classified as *Rugilus* that I have seen belong to one or other of vice undoubtedly phyletically distinct groups, at least four of which correspond to subgenera as defined by FAGEL (1953). These are:

1. *Eurystilicus* FAGEL. The great majority of Oriental species (23 described + ca. 10 others seen) belong to this group, which includes species from the whole of sub-Saharan Africa, the Indian Ocean, the whole of southern Asia eastwards to New Guinea and northwards along the pacific seaboard to Korea and Japan. The westernmost limits of the group in Asia are shown on map 1. The group is readily identified by the very fine and dense punctuation of the head and pronotum, the latter always devoid of a mid-longitudi-



nal impunctate band, and by the mandibles, both tri-dentate, with much larger, triangular basal tooth. It includes all the species listed by CAMERON (1931) except *R. pygmaeus* KRAATZ, *R. parvus* CAMERON and *R. gracilis* EPPELSHEIM, plus all those described from South East Asia.

2. An unnamed group of minute (2-3 mm) afro-oriental species, including *R. pygmaeus* and *R. parvus* from South and South East Asia, *R. minimus* BERNHAUER from central Africa and perhaps other African species. FAGEL (1953) left these in *Rugilus* s.str. after creating eleven other subgenera for the African fauna, but they clearly constitute a separate phyletic line from the palearctic species.

3. Another unnamed group, represented so far by a single undescribed female insect from North Thailand (in coll. Rougemont) which bears some resemblance to the African subgenus *Cephalostilicus* FAGEL.

4. *Rugilus* s.str.: This group includes all 23 West-Palearctic species and 2 from Japan; the known easternmost limits of its distribution on the continent are shown on map 1: the northern prong, extending along the Tien Shan range, is occupied by *R. capitalis* GEMMINGER & HAROLD, the southern prong, reaching to Ladakh, is the range of *R. caporiaccoi*.

5. *Tetragnathostilicus* SCHEERPELTZ. As was suggested in my 1987 article, the morphological differences between *Tetragnathostilicus* and *Rugilus* s.str. alone scarcely warrant taxonomic separation. However, the two groups are allopatric, as shown on map 1 (*R. prolongatus*, represented by circles, lies within the range of *Rugilus* s.str., but this species only belongs to *Tetragnathostilicus* by definition, by virtue of the labrum; its other characters show that it is more closely related to some *Rugilus* s.str. species.

Map 1 shows the distribution of the three main groups of *Rugilus* sensu lato in central Asia. *Rugilus* s.str. (area R) and *Eurystilicus* (area E) are separated by arid areas: the hot deserts of Baluchistan, Sind and Thar in the South West and the cold deserts of Tibet, Taklamakan and Gobi in the North East. A bridge linking areas R and E exists in that part of the western Himalaya which runs through North Pakistan and Kashmir. The distribution of the three groups in this region is significant, as it indicates different climatic requirements for each one.

The tropical group *Eurystilicus* lives both at low and high altitudes (sometimes occurring with *Tetragnathostilicus*), but not outside the monsoon region, and in the North West does not extend beyond Himachal Pradesh.

One representative of *Rugilus* s.str., *R. caporiaccoi*, inhabits the Karakorum and Ladakh, where it is found only at the water's edge on the banks of the upper Indus and its tributaries, in an otherwise arid and inhospitable environment. This route of penetration into the Himalaya at first seems surprising, given that the group is not represented in the fertile, alpine zone in Swat, Hazara and Kashmir which lies just to the South West, but such a pattern indicates that *Rugilus* s.str. does not tolerate the monsoon conditions which prevail there.

*Tetragnathostilicus* on the other hand occupies this bridge, and extends eastwards along the whole length of the Himalaya, where species become more numerous and rainfall higher. It is strictly montane, the micropterous species confined to around 3000 m. altitude, neither straying onto the arid plateaux to the North nor to lower altitudes in the foothills, but it descends to lower altitudes beyond the Himalaya (in Burma and China).

*Tetragnathostilicus* thus seems to have evolved from *Rugilus* s.str. and exploited an environment inimical to the latter.

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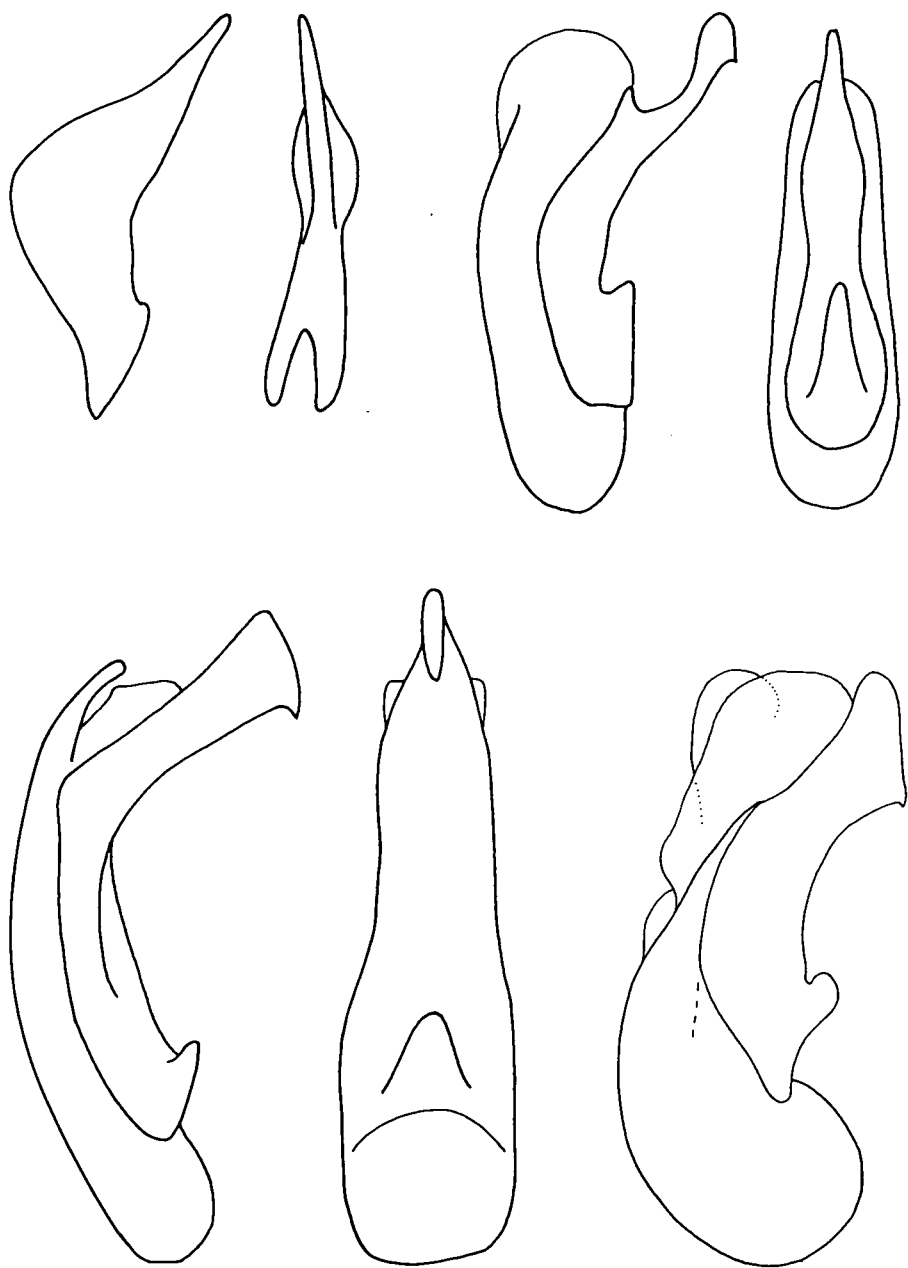
### Zusammenfassung

Aufbauend auf eine frühere Arbeit über die Untergattung *Tetragnathostilicus* SCHEERPELTZ der Gattung *Rugilus* LEACH (ROUGEMONT 1987), beschreibt der Autor sechs neue Arten: *R. bagmaticolus* (Nepal), *R. gansuensis* (China), *R. latiparameris* (Nepal), *R. longiparameris* (Nepal), *R. schawalleri* (Nepal) and *R. smetanai* (Nepal). *Rugilus paradoxus* BERNHAUER wird mit *R. gracilis* EPPELSHEIM synonymisiert.

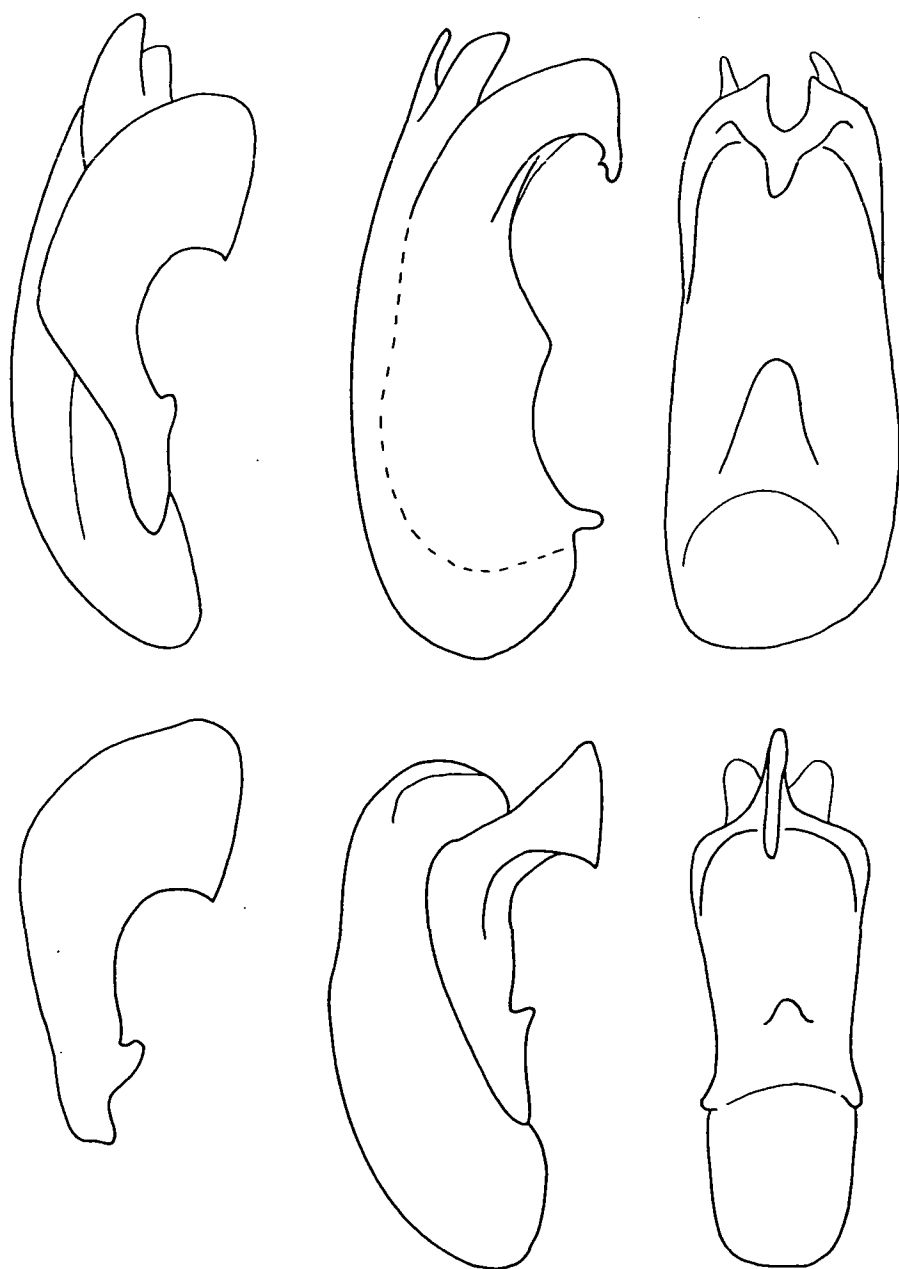
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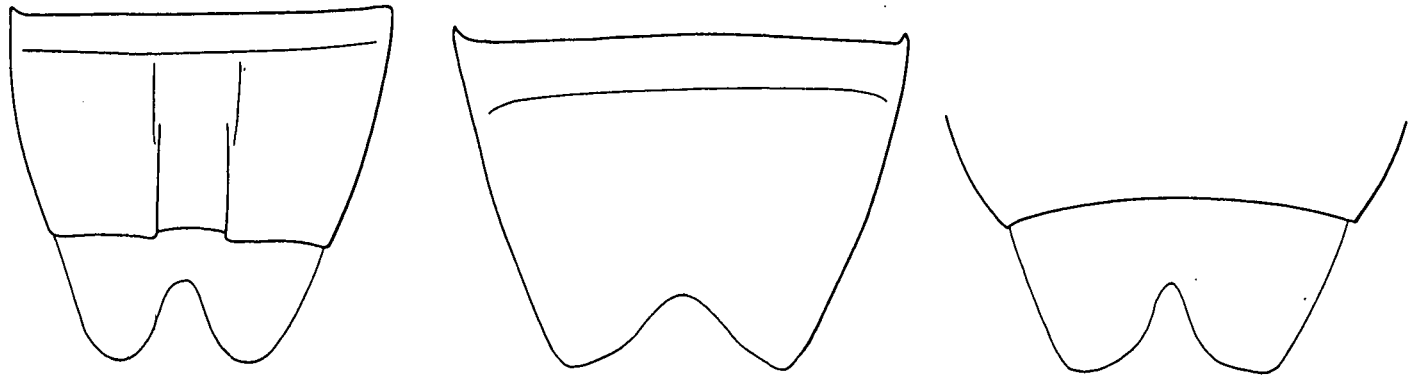
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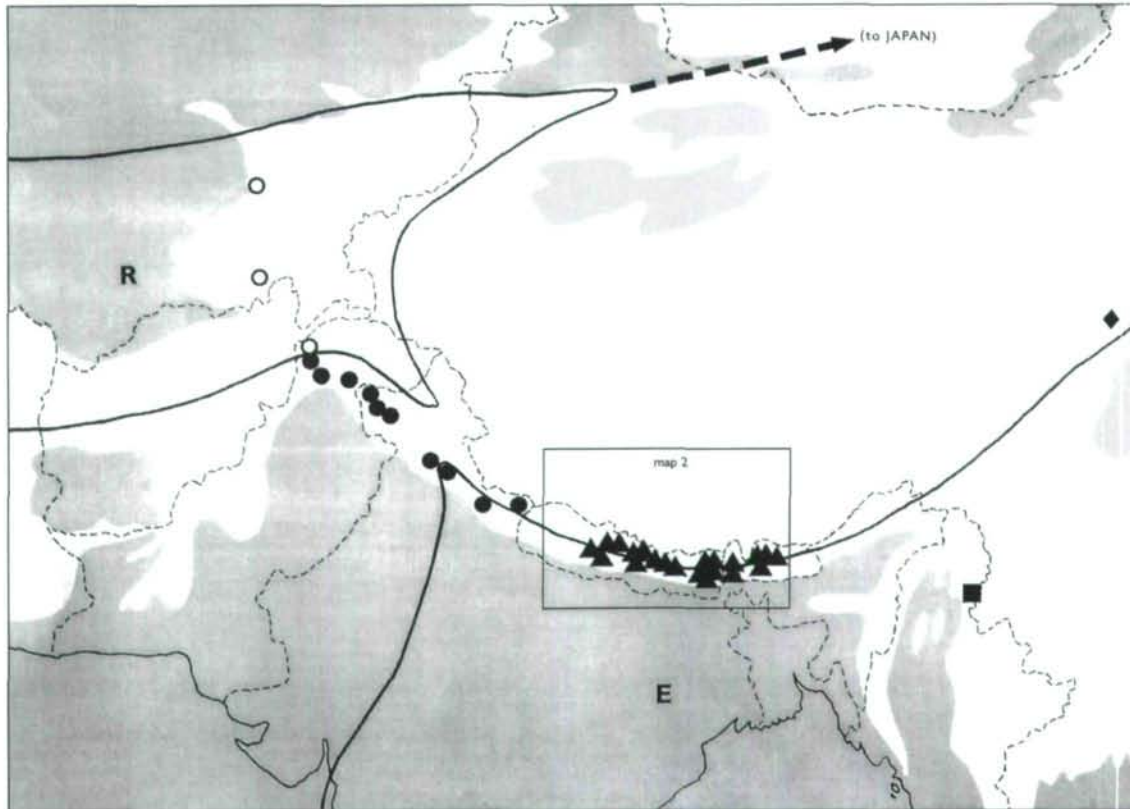
**Figs. 1-4:** Aedeagus of 1) *Rugilus gansuensis* (ventral blade only); 2) *R. smetanai*; 3) *R. longiparameris*; 4) *R. bagmaticolus* (lateral view). a) lateral view; b) ventral view.



**Figs. 5-8:** Aedeagus of 5) *Rugilus latiparameris* (holotype, lateral view); 6) *R. latiparameris* (paratype, lateral view, ventral blade only); 7) *R. schawalleri*; 8) *R. prodoni*. a) lateral view; b) ventral view.

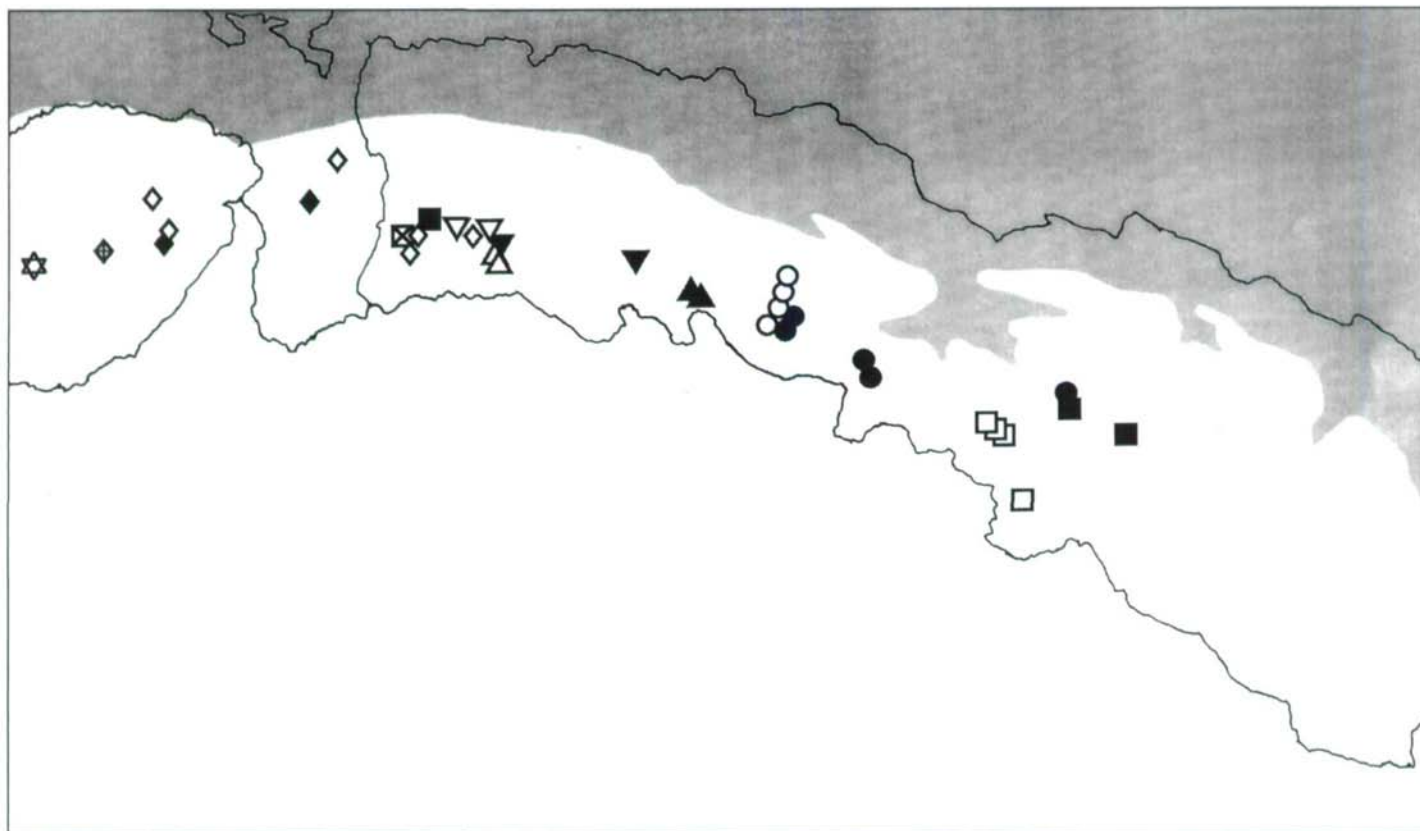


**Figs. 9-11:** 9) *Rugilus gansuensis*, male sternites VII and VIII; 10) *R. bagmaticolus*, male sternite VIII; 11) *R. schawalleri*, male sternites VII (pars) and VIII.



**Map 1:** Distribution of *Rugilus* (*Tetragnathostilicus*) spp. Central Asia: *R. prolongatus* (○); *R. gracilis* (●); *R. gansuensis* (◆); *R. malaisei* (■); other species (▲) - see map 2.

Area R: Easternmost limits in Eurasia of *Rugilus* s.str. Area E: Westernmost limits in Eurasia of *Eurystilicus* FAGEL Shaded areas: elevation below 1000m.



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**Map 2:** Distribution of *Rugilus* (*Tetragnathostilicus*) spp. in Nepal, Sikkim and Bhutan: *R. morvani* (■); *R. quadridentatus* (●); *R. smetanai* (□); *R. bagmaticolus* (○); *R. prodoni* (▼); *R. nepalensis* (▲); *R. longiparameris* (▽); *R. latiparameris* (△); *R. gogonensis* (◇); *R. schawalleri* (⊠); *R. bhotius* (◆); *R. dorjulensis* (⊕); *R. brahmanus* (☆).

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