The Genus *Prostomis* (Coleoptera: Prostomidae) in Australia and Adjacent Regions

By Wolfgang Schawaller, Stuttgart

With 34 figures

Summary

Diagnoses are given for all species of the genus *Prostomis* Latreille from New Guinea, Australia including Tasmania and the Fidji and Samoa Islands. The shape of the jugular processes is considered an important diagnostic species character. *P. lawrencei* n. sp. from Papua New Guinea and Queensland and *P. papuana* n. sp. from Papua New Guinea are described. A species list of all congener is added.

Zusammenfassung


Contents

1. Introduction .......................................................... 1
2. Species characters .................................................... 2
3. Species from Australia and adjacent regions .................... 2
4. Species list of the genus *Prostomis* Latreille, 1825 .......... 11
5. References .......................................................... 11

1. Introduction

In continuation of my previous contributions on the genus *Prostomis* Latreille from the Himalayas (Schawaller 1991) and from southeastern Asia (Schawaller 1992), the species from New Guinea, Australia including Tasmania and from the Fidji and Samoa Islands are treated in the present paper. Up to now, 6 species are known from this area (Arrow 1927; Blackburn 1897, 1903; Fairmaire 1881; Fauvel 1903; Waterhouse 1877), I can add 2 new species (map see Fig. 34). Altogether the genus *Prostomis* Latreille now contains 21 species, a check-list is added
herein. All of the congeneres are inhabitants of primary forests which are highly threatened everywhere in the world.


Acknowledgements

I would like to thank the following colleagues for placing material at my disposal and for exchange of material: D. Kempster (BMNH), J. F. Lawrence (ANIC), I. Löbl (MHNG), O. Merkl (TMB), G. B. Monteith (QMSB).

2. Species characters

Jugular processes: The shape of these structures is considered an important diagnostic species character. Morphological variation of this character is restricted, only very few specimens of a population show some modifications of its basic shape. No significant sexual differences occur, the function of the processes are unknown.

Aedeagus: In the majority of the species (mostly from Eurasia, the Himalayas and southeastern Asia) the aedeagus is quite uniform and shows only minute differences. Some species (from New Guinea and Australia), however, have quite unique peculiarities concerning its morphology. In relation to the body length, the aedeagus is extraordinary small and less sclerotized.

Mandibles: Several species have lateral dilatations in the mandibles. The form of these dilatations is quite variable and often related to the body size. But the existence of such dilatations, either in the middle of the mandibles or on its base, seems to be a diagnostic character. No significant sexual differences occur.

Proportions and punctation: The proportions of pronotum and the punctation of head, pronotum and elytrae show no significant differences between species and sexes and is not treated in the diagnoses.

Larval characters: Larvae of only 4 species are described (cf. Schawaller 1991), they show very few (?) significant) differences in the tergite setation and in the form, granulation and in number of spines of the last abdominal segment.

3. Species from Australia and adjacent regions

3.1. Prostomis atkinsoni Waterhouse, 1877 (Figs. 1–2, 28)

Type material: WATERHOUSE (1877) did not state the number of type specimens, but because he treated sexual differences, he must have seen at least 1 ♂ and 1 ♀. In the description, the type locality was given as Tasmania. The specimen, which I have seen is labelled: V. D. L., 77–19, type (BMNH), designated herewith as holotype.

SCHAWALLER, PROSTOMIS IN AUSTRALIA


Diagnosis: Jugular processes clearly asymmetrical, left process longer and with barbed hook at the tip, right process shorter and acute at the tip; inner side of both processes slightly sinuate (Fig. 2). Mandibles laterally in the middle with earlike dilatation, which is sometimes bent ventrally (Fig. 1). Aedeagus Fig. 28. Body length: 6.0–9.3 mm.

Remarks: Similar jugular processes possesses morsitans Pascoe from the Himalayas, the form of the hook, however, is different and the processes are much straighter.

Collecting sites: Notboflagus etc., window trap, wet forest log, in rotting log, pantrap, in myrtle log, under bark, on barksurface at night.

Distribution: Tasmania including Bruny Island.

3.2. Prostomis cornuta Waterhouse, 1877 (Figs. 3–4, 27)

Type material: WATERHOUSE (1877) did not state the number of type specimens. In the description, the type locality was given as South Australia. The specimen, which I have seen is labelled: S Austral., 59.24, Bakewell, type (BMNH), designated herewith as hololectotype.


Diagnosis: Jugular processes symmetrical, tips without modifications and slightly bent inwards; inner side of both processes slightly sinuate, outer side without hooks or teeth (Fig. 4). Mandibles slender, without dilatations (Fig. 3). Aedeagus Fig. 27. Body length: 5.0–6.7 mm.

Remarks: The jugular processes are similar to those in kinabaluca Schawaller from Sabah and in samoensis Arrow from Samoa, but in these both species the processes are somewhat different in length and thicker.

Collecting sites: Rotten log.

Distribution: Southeastern Australia (VIC, NSW, ACT, single locality Peachester in southern QLD).
3.3. *Prostomis gladiator* Blackburn, 1903 (Figs. 5–6)

Type material: **Blackburn** (1903) did not state the number of type specimens. In the description, the type locality was given as N. S. Wales (Blue Mountains). The specimen, which I have seen is labelled: Australia, N. S. W., Mt. Wilson, I. 1889 (OLLIFF), type (BMNH), designated herewith as holotype.

Material: No further material available.

Diagnosis: Jugular processes asymmetrical, left process longer and the acute tip bent inwards, right process shorter and the acute tip slightly bent outwards; inner side of both processes slightly sinuate, outer side without hooks or teeth (Fig. 6). Mandibles laterally in the middle with earlike dilatation (Fig. 5). Aedeagus unknown, single type not examined. Body length: 6.5 mm.

Remarks: The basic shape of the jugular processes is similar to *cornuta* Waterhouse from southeastern Australia, but in this species both processes are straight and can be seen in dorsal view whereas in *gladiator* Blackburn both processes point inwards. Furthermore, both species have different mandibles.

Distribution: Southeastern Australia (known only from the type locality in NSW).

3.4. *Prostomis intermedia* Blackburn, 1897 (Figs. 7–8, 25–26)

Type material: **Blackburn** (1897) did not state the number of type specimens, but because he listed two localities, he must have seen at least 2 specimens. In the description, the type localities were given as Victoria and N. S. Wales. The specimen, which I have seen is labelled: Australia, Vict., 6293, type (BMNH), designated herewith as holotype.


Clyde Mt., 750 m, 26. X. 1982 (leg. DOYEN & LAWRENCE), 2 ex. ANIC; — Braidwood near Canberra, 6. IX. 1986, 1 ex. ANIC; — Mt. Margaret, 1100 m, 5. II. 1983 (leg. DOYEN), 1 ex. ANIC. — Australia ACT: Blundells Creek Road, Brindabella Range, 13. I. 1984 (leg. LAWRENCE & WEIR), 1 ex. ANIC; — Blundells Creek, 35.22 S/148.50 E, 21. XII. 1988 (leg. HANSEN, LAWRENCE & DRESSLER), 1 ex. ANIC. — Australia: Glenferrie, 1935, 2 ex. BMNH; — Australia occid., 1 ex. TMB; — Australien 9907 (leg. von MÜLLER), 2 ex. SMNS.

Diagnosis: Jugular processes clearly asymmetrical, left process longer and at the end with a ventrally bent tip and before that with a ventrally bent tooth, right process shorter and the acute tip bent outwards; inner side of both processes slightly sinuate (Fig. 8). Mandibles laterally in the middle with a mostly strong, sometimes with a weaker dilatation (Fig. 7). Aedeagus Figs. 25—26. Body length: 8.5—9.0 mm.

Remarks: The jugular processes have a faint similarity to those of editaeh Schawaller from the Himalayas, but in that species also the right process is differentiated and the tip and the lateral tooth of the left process is not bent ventrally (apart from different mandibles).

Collecting sites: Under bark, in rotten wood, Eucalyptus regnans — Nothofagus cunninghami, flight window trap, wet sclerotized forest.

Distribution: Southeastern Australia (VIC, NSW, ACT), Tasmania (single locality Buss).

3.5. Prostomis lawrencei n. sp. (Figs. 11—16, 30—32)

Holotype ♂: Papua New Guinea: Onerunka near Kainantu, II. 1980 (leg. ULLRICH), MHNG.

Paratypes: Papua New Guinea: Onerunka near Kainantu, IV. 1979—II. 1980 (leg. ULLRICH), 40 ex. MHNG, 6 ex. SMNS. — Australia QLD: 29 km SE Mareeba, 1100 m, 14.—15. XII. 1982 (leg. DOYEN), 13 ex. ANIC, 2 ex. SMNS; — Kirrama Range, 22 km NE Kennedy, 800 m, 11. XII. 1986 (leg. HOWDEN), 1 ex. ANIC; — Kirrama Range, Douglas Creek Road, 800 m, 9. XII. 1986—11. I. 1987 (leg. MONTEITH, THOMPSON & HAMLET), 4 ex. QMSB; — Birthday Creek, 6 km NW by W Paluma, 18.59 S/146.10 E, 25. IX. 1980 (leg. WEIR), 4 ex. ANIC; — Gold Hill, Mc Dowall Range, 16.05 S/145.17 E, 550 m, 1. XII. 1976 (leg. TAYLOR & WEIR), 4 ex. ANIC, 1 ex. SMNS; — Mt. Baldy, near Atherton, forest reserve no. 194, 4000 ft., 5. XII. 1968 (leg. BRITTON & MISKO), 1 ex. ANIC; — Bellenden Ker Range, 1 km S Cable Tower 6, 500 m, 17. X.—5. XI. 1981 (Queensland earthwatch), 1 ex. ANIC; — Bellenden Ker Range, Summit TV Station, 1560 m, 17. X.—5. XI. 1981 (Queensland earthwatch), 1 ex. ANIC, 1 ex. QMSB; — Boulder Creek, 11 km NNW Tully, 1000 m, 16.—19. XI. 1984 (leg. COOK, MONTEITH & THOMPSON), 9 ex. QMSB; — Thornton Peak, via Daintree, 1100—1300 m, 24.—27. IX. 1984 (leg. MONTEITH), 5 ex. QMSB; — Thornton Peak, via Daintree, 1100—1300 m, 20.—22. IX. 1981 (leg. MONTEITH & COOK), 1 ex. QMSB; — 5.5 km N Mt. Lewis, via Julatten, 1100 m, 8. IX. 1981 (leg. MONTEITH & COOK), 1 ex. QMSB; — 2 km SE Mt. Spurgeon, via Mt. Carbine, 1100 m, 20.—21. XII. 1988 (leg. MONTEITH & THOMPSON), 1 ex. QMSB; — Lambs Head, 10 km W Edmonton, 1200 m, 4.—13. XII. 1988 (leg. MONTEITH & THOMPSON), 2 ex. QMSB; — 2.5 km W Cape Tribulation, site 5, 180 m, 23. IX.—7. X. 1982 (leg. MONTEITH, YEATES & THOMPSON), 1 ex. QMSB; — Mt. Pieter-Botte, 7 km W Cape Tribulation, 800 m, 22. IV. 1983 (leg. MONTEITH & YEATES), 2 ex. QMSB; — Mt. Finnigan, via Helenvale, 760—1000 m, 20.—27. VII. 1974 (leg. MONTEITH & COOK), 10 ex. QMSB, 2 ex. SMNS; — Devils Thumb Area, 10 km NW Mossman, 1000—1180 m, 9.—10. X. 1982 (leg. MONTEITH, YEATES & THOMPSON), 4 ex. QMSB; — Plane Grash, 11 km NW Mossman, 1240 m, 27. XII. 1989 (ANZSES expedition), 2 ex. QMSB; — Mossman Bluff Track, 5—10 km W Mossman, site 8, 1180 m, 20. XII. 1989—15. I. 1990 (leg. MONTEITH, THOMPSON & ANZSES expedition), 6 ex. QMSB; — same, 17.—31. XII. 1988, 1 ex. QMSB; — Head of Roots Creek, 12 km WNW Mossman, 1200 m, 28.—29. XII. 1989 (ANZSES expedition), 1 ex. QMSB; — Upper Dollins Creek, 12 km W Mossman, 1100 m, 23. XII. 1989 (leg. MONTEITH & ANZSES expedition), 4 ex. QMSB.
Diagnosis: Jugular processes symmetrical or slightly asymmetrical, both processes equal in length or left process somewhat longer and straight (Fig. 14) or slightly sinuate (Figs. 12, 15), both tips rounded and bent inwards, right process sometimes very short (Fig. 16); inner side of both processes slightly sinuate, outer side without hooks or teeth. Mandibles slender, without dilatation (Figs. 11, 13). Aedeagus Figs. 30–32. Body length: 5.3–10.0 mm.

Remarks: The jugular processes are somewhat variable, but the corresponding aedeagi show no significant differences. The shape of the jugular processes is very similar to that in \textit{papuana} n. sp., but this species has the processes simply bent and not sinuate at the inner side. Completely different is the shape of the aedeagus in \textit{lawrencei} n. sp. and \textit{papuana} n. sp., both species occur sympatrically or even syntopically in New Guinea.

Collecting sites: Rain forest, Berlese, flight intercept trap.

Distribution: Papua New Guinea (single locality), northeastern Australia (Northern QLD).

Derivatio nominis: Named after John F. Lawrence, the well known Coleopterologist from the Australian National Insect Collection in Canberra.

3.6. \textit{Prostomis pacifica} Fairmaire, 1881 (Figs. 17–22)

Type material: Type material was not examined.


Diagnosis: Jugular processes more (Fig. 22) or less (Figs. 18, 20) asymmetrical, left process somewhat longer, both tips rounded and left tip sometimes bent outwards and sometimes bent inwards; inner side of both processes slightly sinuate, outer side without hooks or teeth. Mandibles laterally at the base with earlike dilatation (Figs. 17, 19, 21). Aedeagus unknown, only females available. Body length: 6.2–11.0 mm.

Remarks: The form of the jugular processes is very similar to their shape in \textit{samoensis} Arrow from Samoa, which should be synonymized when considering this character alone. However, in \textit{samoensis} the mandibles are slender and have no dilatation as in \textit{pacific}. Therefore I stick to the validity of both species, also considering the isolation of both populations on different archipelagos.

Collecting sites: In log of Agathis vitiensis.

Distribution: Fidji Archipelago (Islands Viti Levu, Vanua Levu, Kadavu) and New Caledonia (cf. Fauvel 1903, no specimens seen).

3.7. \textit{Prostomis papuana} n. sp. (Figs. 9–10, 33)

Holotype ♂: Papua New Guinea: Onerunka near Kainantu, II. 1980 (leg. Ullrich), MHNG.


Diagnosis: Jugular processes slightly asymmetrical, left process somewhat longer, both tips rounded and bent inwards; inner side of both processes bent, outer side...
Figs. 30–33. Aedeagus. — 30. *P. lawrencei* n. sp., paratype from Mt. Baldy; — 31. *P. lawrencei* n. sp., holotype; — 32. *P. lawrencei* n. sp., paratype from Mareeba; — 33. *P. papuana* n. sp., holotype. — Scale: 0.5 mm.

without hooks or teeth (Fig. 10). Mandibles slender, without dilatation (Fig. 9). Aedeagus Fig. 33. Body length: 7.0–8.7 mm.

Remarks: The jugular processes are similar to those in *schlegeli* Olliff from Sri Lanka, in that species both processes are equal in length and their inner sides are nearly straight. Furthermore, both aedeagi are completely different (Figs. 29, 33).

Distribution: Papua New Guinea (single locality).

3.8. *Prostomis samoensis* Arrow, 1927 (Figs. 23–24)

Type material: The specimen, which I have seen is labelled: Samoa, 1920–401 (Swale), type (BMNH), designated herewith as hololectotype.

Material: No further material examined.

Diagnosis: Jugular processes somewhat asymmetrical, left process somewhat longer, both tips rounded and not bent outwards; inner side of both processes slightly sinuate, outer side without hooks or teeth (Fig. 24). Mandibles slender, without dilatation (Fig. 23). Aedeagus unknown, single type not examined. Body length: 8.0 mm.

Remarks: The jugular processes have a similar shape as in *kinabaluca* Schawaller from Sabah, in this species, however, the tips are more acute and are bent more outwards. See also remarks concerning *pacific* Fairmaire.

Distribution: Samoa Archipelago (which islands?)

4. Species list of the genus *Prostomis* Latreille, 1825

*africana* Grouvelle, 1896  
a*tkinsoni* Waterhouse, 1877  
*beatae* Schawaller, 1991  
*cameronica* Schawaller, 1992  
*cornuta* Waterhouse, 1877  
*editheae* Schawaller, 1991  
*gladiator* Blackburn, 1903  
*intermedia* Blackburn, 1897  
*katrinae* Schawaller, 1991  
*kinabaluca* Schawaller, 1992  
*latoris* Reitter, 1889  
*lawrencei* Schawaller, 1993  
*luzonica* Schawaller, 1992  
*mandibularis* (Fabricius, 1801)  
*mordax* Reitter, 1887  
*morsitans* Pascoe, 1860  
*pacifica* Fairmaire, 1881  
*papuana* Schawaller, 1993  
*samoensis* Arrow, 1927  
*schlegeli* Olliff, 1884  
*susannae* Schawaller, 1991

Africa  
Australia  
Himalayas  
Malaysia  
Australia  
Himalayas, Yunnan  
Australia  
Australia  
Thailand  
Borneo, Java, Sumatra  
Japan, Taiwan  
New Guinea, Queensland  
Luzon  
Europe, Caucasus, Elburs Mts., N America  
Eastern Siberia, Kuriles, Japan  
Himalayas  
Fidji Archipelago, ? New Caledonia  
New Guinea  
Samoa Archipelago  
Sri Lanka  
Himalayas.

5. References


Author’s address:

Dr. WOLFGANG SCHAWALLER, Staatliches Museum für Naturkunde (Museum am Löwentor), Rosenstein 1, D-7000 Stuttgart 1.