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The Genus *Gonocephalum* Chevrolat (Coleoptera: Tenebrionidae) in the Nepal Himalayas*)

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With 49 figures

Summary

The species of the tenebrionid genus *Gonocephalum* Chevrolat 1849 from the Nepal Himalayas are treated. For each species the faunistic data, taxonomic remarks, figures of the aedeagus and the body shape, and the vertical and horizontal distributional data are given. 23 species are known from Nepal, further 19 species from other Himalayan regions are listed. *Gonocephalum martensi* Kaszab 1977 is considered a **junior synonym** of *simulathrix* (Fairmaire 1891), further synonymies are supposed but not established. Some remarks on biology, syntopic occurrence and zoogeography are added.

Zusammenfassung

Die Arten der Tenebrioniden-Gattung *Gonocephalum* Chevrolat 1849 aus dem Nepal-Himalaya werden behandelt. Für jede Art werden faunistische Daten, taxonomische Anmerkungen, Abbildungen des Aedoeagus und der Körperform sowie die vertikale und horizontale Verbreitung gegeben. 23 Arten sind aus Nepal bekannt, weitere 19 Arten aus anderen Regionen des Himalaya werden aufgelistet. *Gonocephalum martensi* Kaszab 1977 wird als **jüngeres Synonym** von *simulathrix* (Fairmaire 1891) angesehen, weitere Synonymien werden vermutet, aber nicht errichtet. Einige Anmerkungen zur Biologie, zum synoptischen Vorkommen und zur Zoogeographie sind angefügt.

*) Results of the Himalaya Expeditions of J. Martens, no. 210. For no. 209 see: Theses Zoologicae (Koenigstein), 1997. J. M. sponsored by Deutscher Akademischer Austauschdienst and Deutsche Forschungsgemeinschaft.

**)Contributions to Tenebrionidae, no. 18. For no. 17 see: Ent. Z. 107, 1997.

Contents

1. Introduction

The species of the tenebrionid genus *Gonocephalum* Chevrolat 1849 are distributed in all continents except in the Americas. The genus contains about 200 species and in particular the Oriental region is inhabitated by numerous and morphologically quite diverse species. The only existing monograph for the Oriental species was published by Kaszab (1952).

New collections in the Nepal Himalayas induced me to summarize the knowledge about the species of *Gonocephalum* from that country. Some species have been reported already from Nepal (Hope 1831; Kaszab 1973, 1975 a, 1977). In this review 23 species from Nepal are treated in detail, a remarkable number for this small country. Further 19 species from other Himalayan regions are additionally listed which might be expected in Nepal too. The great vertical and horizontal zonation of the Himalayan mountain ranges with its numerous ecological niches allow the existance of numerous species in a relatively small area. The faunistic data are roughly sorted herein from the west to the east of Nepal as far as the localities could be located.

The species characters are discussed in detail by Kaszab (1952), who also provided an identification key. It is not the purpose of this paper to repeat all taxonomic characters of the treated species, but the shapes of the body and of the aedeagus are figured herein, because these characters are not documented in that revision. Some synonymies are supposed but only one is established herein, further studies in a wider geographical frame are necessary to clarify these questions.

Abbreviations

BRIO	Biosystematics Research Institute Ottawa (Dr. A. Smetana);
CHBH	Collection Prof. H. J. Bremer, Heidelberg;
HNHM	Hungarian Natural History Museum Budapest (Dr. O. Merkl);
MHNG	Muséum d'Histoire Naturelle Genève (Dr. I. Löbl);
NHMB	Naturhistorisches Museum Basel (Dr. M. Brancucci);
NKME	Naturkundemuseum Erfurt (M. Hartmann);
SMF	Senckenberg Museum Frankfurt (Dr. D. Kovac);
SMNS	Staatliches Museum für Naturkunde Stuttgart (author);
SMTD	Staatliches Museum für Tierkunde Dresden (O. Jäger);
ZSM	Zoologische Staatssammlung München (Dr. M. Baehr).

Acknowledgments

Thanks are due to all colleagues and friends who made material available for this study (see abbreviations). Prof. Dr. J. Martens (Mainz) as well as herein unnamed Nepalese guides, cooks and porters helped during our joint field work in various aspects. D. Ahrens und J. Schmidt (both Rostock) donated tenebrionid material from Nepal to the museum in Stuttgart.

2. Nepalese species

2.1. *Gonocephalum belli* Kaszab 1952 (Figs. 13–14)

Material: Myagdi Distr., Myagdi Khola valley, Khibang bridge to Boghara, 1400–1800 m, 20. V. 1995 leg. Martens & Schawaller, 1 ex. SMNS. – Myagdi Distr., Myagdi Khola SE Darbang, 1000 m, 30. V. 1995 leg. Martens & Schawaller, 1 ex. SMNS. – Mustang Distr., Kali Gandaki valley, Lethe to Dana, 1400–1800 m, 25. X. 1992 leg. Schmidt, 2 ex. SMNS. – Annapurna region, Birethanti, 1400 m, 8. X. 1992 leg. Weipert, 1 ex. SMNS. – Annapurna, Birethanti-Gorapani, 4.–9. VI. 1992 leg. Jeniš, 1 ex. CHBH. – Pokhara, lake, 850 m, 10. V. 1993 leg. Schmidt, 1 ex. SMNS. – Marsyandi valley, Syangde, 1100 m, 30. V. 1993 leg. Schmidt, 1 ex. SMNS. – Kathmandu valley, Bagmati river, 1300 m, 27. IV. 1995 leg. Hartmann & Weigel, 2 ex. NKME. – Kathmandu valley, Bagmati river, 1200 m, 13. X. 1992 leg. Weipert, 1 ex. SMNS. – Kathmandu valley, Pashupatinath, 1300 m, 14. X. 1992 leg. Weigel, 1 ex. SMNS. – Birganj, Lothar, 450 ft., 19. XI. 1967 Can. Nepal Exp., 1 ex. BRIO. – Indrawati Khola valley, Saretar, 1700 m, 25.–26. VI. 1962 leg. Ebert, 1 ex. HNHM. – Barahbise to Ting Sang La, without date leg. Franz, 1 ex. HNHM.

Remarks: The late Dr. Kaszab labelled the specimen from Birganj as *tibetanum* Kaszab 1952, the specimens from Saretar and Barahbise (and from other localities in HNHM) were labelled by him as *karakorumense* Kaszab 1961. Specific differences between both series could not be found. However, all the above listed material fits better to the description of *belli* than both to *tibetanum* and *karakorumense*. For example, the body length of the Nepalese records coincides with those in *belli* (6.5–7.2 mm), and not with those in *karakorumense* and *tibetanum* (8.0–8.5 mm). Furthermore, all Nepalese material originates from lower altitudes, thus zoogeographically the Nepalese records are more probably conspecific with the Indian *belli* than with species from Palaearctic high localities as *karakorumense* (Karakorum) and *tibetanum* (Tibet).

Distribution: Northern India; Nepal (Kaszab 1970, 1973 sub *karakorumense*).

2.2. *Gonocephalum bilineatum* (Walker 1858) (Figs. 1–2)

Material: Jumla Distr., Jumla, 2400 m, 10. VII. 1995 leg Ahrens, 26 ex. SMNS. – Jumla Distr., Tatopani, Tila river, 2200 m, 24. V. 1995 leg. Weigel, 2 ex. NKME, 1 ex. SMNS. – Dolpo, Rimi, 3000 m, 16. V. 1995 leg. Weigel, 1 ex. NKME. – Myagdi Distr., Lulang to Phalai Gaon, 2100–1850 m, 12. III. 1994 leg. Ahrens, 43 ex. SMNS. – Myagdi Distr., Phalai Gaon, 1800 m, 13. III. 1994 leg. Ahrens, 3 ex. SMNS. – Myagdi Distr., Ghara, Ghorepani, 19. III. 1994 leg. Ahrens, 5 ex. SMNS. – Myagdi Distr., Beg Khola village to Bega, 1050–1650 m, 16. V. 1995 leg. Martens & Schawaller, 1 ex. SMNS. – Myagdi Distr., Kuinekani to Marangpa, 2300–2000 m, 19. V. 1995 leg. Martens & Schawaller, 5 ex. SMNS. – Myagdi Distr., Marangpa to Deorali, 2000–2400 m, 19. V. 1995 leg. Martens & Schawaller, 1 ex. SMNS. – Myagdi Distr., Bim to Darbang, 1150–1000 m, 30. V. 1995 leg. Martens & Schawaller, 3 ex. SMNS. – Myagdi Distr., Baglung to Bim, 1850–2100 m, 2. III. 1994 leg. Ahrens, 4 ex., SMNS. – Mustang Distr., Kali Gandaki, Dana, 1600 m, 3. X. 1983 leg. Löbl, 1 ex. MHNG. – Mustang Distr., Kali Gandaki valley, Dana, 1500–1300 m, 14. V. 1995 leg. Martens & Schawaller, 1 ex. SMNS. – Mustang Distr., Ghasa-Tatopani, 15. XI. 1977 leg. Frank, 1 ex. SMNS. – Annapurna region, Birethanti, 1560 m, 13. X. 1987 leg. Winkelmann, 1 ex. SMNS. – Annapurna region, Bhulbhule, 870 m, 19. IX. 1982 leg. Weigel, 1 ex. SMNS. – Annapurna region, Bagarchap, 1700–2200 m, 25. IX. 1992 leg. Schmidt, 1 ex. SMNS. – Ghanpokhara, 2500 m, X. 1977 leg. Kleinfeld, 1 ex. SMNS. – E Pokhara, Kalikastan, 1500 m, 9. V. 1993 leg. Schmidt, 2 ex. SMNS. – W Pokhara, Ulleri S Ghorepani, 2000 m, 16. VI. 1993 leg. Schmidt, 1 ex. SMNS. – N Pokhara, below Sikles, 1700 m, 14. V. 1993 leg. Schmidt, 2 ex. SMNS. – N Pokhara, Sikles, 2000 m, 15. V. 1993 leg. Schmidt, 1 ex.

SMNS. – Kaski Distr., Pokhara, Phewa lake, 800 m, 28.–31. III. 1994 leg. Ahrens, 1 ex. SMNS. – Kaski Distr., Pokhara, Sharankot, 1500 m, 28. II. 1994 leg. Ahrens, 3 ex. SMNS. – Kaski Distr., Chhachok-Taprang, Madi Khola, 1300–1700 m, 11. V. 1993 leg. Ahrens, 4 ex. SMNS. – Lamjung Distr., Marsyandi valley, Phalesangu to Lamjung, 640–750 m, 9. IV. 1980 leg. Martens & Ausobsky, 1 ex. SMNS. – Marsyandi valley, Chamje, 1300–1500 m, 24. VIII. 1995 leg. Schmidt, 2 ex. NKME. – Marsyandi valley, Syangde, 1000–1200 m, 25. VIII. 1995 leg. Schmidt, 1 ex. NKME. – Ghorka/Dhading Distr., Buri Gandaki valley, Jagat to opposite Pangshing, 1300–1650 m, 31. VII. 1983 leg. Martens & Schawaller, 2 ex. SMNS. – Dhading Distr., Thorpu to Kordunje, 1300–1400 m, 24. VII. 1983 leg. Martens & Schawaller, 3 ex. SMNS. – Syangia Distr., 2–10 km E Syangia, 1200–1600 m, 22.–26. VII. 1995 leg. Csorba, 1 ex. HNHM. – Kathmandu, safari park, 1300 m, 6. VI. 1995 leg. Weigel, 2 ex. NKME. – Kathmandu valley, Burhanilkanth, 1440–1650 m, 16. VI. 1983 leg. Brancucci, 15 ex. NHMB, 4 ex. SMNS. – Kathmandu valley, Sunderijal, 8000 ft., 12. VI. 1967 Can. Nepal Exp., 1 ex. BRIO. – Kathmandu valley, Patibhbanjyang, 6–7500 ft., 12. VI. 1967 Can. Nepal Exp., 2 ex. BRIO. – Kathmandu valley, Nagarjung, Jamacok, 1400–1600 m; 18. VIII. 1983 leg. Martens & Schawaller, 1 ex. SMNS. – Khandbari Distr., Arun valley, Arunthan, 1100–1300 m, 29. V. 1983 leg. Brancucci, 1 ex. NHMB. – Sankhua Sabha Distr., below Karmarang to Hedagna, 950–1350 m, 5. VI. 1988 leg. Martens & Schawaller, 1 ex. SMNS. – Sankhua Sabha Distr., Arun valley between Mure and Hurure, 2050–2150 m, 9.–17. VI. 1988 leg. Martens & Schawaller, 1 ex. SMNS. – Taplejung Distr., ascent to Khebang from Tada Khola, 1500 m, 25. IV. 1988 leg. Martens & Schawaller, 1 ex. SMNS. – Taplejung Distr., Tamur valley, mouth of Gunsa Khola to Lungthung, 1650–1870 m, 18. V. 1988 leg. Martens & Schawaller, 6 ex. SMNS. – Taplejung Distr., from Yektin to Worebung pass, 1500–1800 m, 21. IV. 1988 leg. Martens & Schawaller, 1 ex. SMNS. – Panchthar Distr., descent to Hinwa Khola bridge, 1850–1200 m, 20. IV. 1988 leg. Martens & Schawaller, 1 ex. SMNS. – Ilam Distr., N Ilam, 1250–1620 m, 25. III. 1980 leg. Martens & Ausobsky, 1 ex. SMNS. – Ilam Distr., Mai Khola valley, ascent from river bank to Gola Kharka, 470–900 m, 8. IV. 1988 leg. Martens & Schawaller, 12 ex. SMNS.

Distribution: Southeastern Asia, Sri Lanka, Japan, Sundas, Philippines, New Caledonia, Hawaii and other Pacific islands; Nepal (Pierre 1961, Kaszab 1970, 1973, 1975 a, 1977).

2.3. *Gonocephalum birmanicum* Kaszab 1952 (Figs. 24–25)

Material: S Pokhara, Kharkhore, without date leg. Franz, 1 ex. HNHM. – Gorkha Distr., Buri Gandaki valley, Arughat to Suteo, 600–700 m, 27. VII. 1983 leg. Martens & Schawaller, 1 ex. SMNS.

Remarks: This probably smallest species of the genus (3.8–4.0 mm) is related to *minusculum* (Fairmaire 1894) but the two species can easily be separated by the shape of the pronotum (basal margin extremely rounded in *birmanicum*, usual in *minusculum* – lateral margin rounded and more broadly separated from the disk in *birmanicum*, nearly straight and narrowly separated in *minusculum*).

Distribution: India, Burma, Thailand (SMNS), Yunnan (coll. Becvar); Nepal (Kaszab 1977).

2.4. *Gonocephalum civicum* Kaszab 1952 (Figs. 32–33)

Material: Dailekh Distr., 15 km N Dailekh, Bharin, 2400 m, 30. V. 1995 leg. Hartmann, 3 ex. NKME, 1 ex. SMNS. – Dailekh Distr., Dailekh 1400–2300 m, 30. V. 1995 leg. Weipert, 3 ex. NKME, 1 ex. SMNS. – Bheri zone, Dailekh-Dungishot Lohre Khola valley, 800–1000 m, 19. VII. 1995 leg. Ahrens, 1 ex. SMNS. – Myagdi Distr., lower Marang Khola valley, Bim, 1150 m, 29. V. 1995 leg. Martens & Schawaller, 1 ex. SMNS. – Kaski Distr., Pokhara, Pame, 900 m, 5.–8. V. 1993 leg. Ahrens, 1 ex. SMNS. –

Kaski Distr., Pokhara, Phewa lake, 800 m, 28.–31. III. 1994 leg. AHRENS, 1 ex. SMNS. – Hetara, Pipley, 26. V.–5. VI. 1969 leg. WOYNAROVICH, 1 ex. HNHM. – Kathmandu valley, Kakani, 2200 m, 27. IV. 1981 leg. LÖBL & SMETANA, 1 ex. HNHM. – Kathmandu valley, Pashupatinath, 1300 m, 14. X. 1992 leg. WEIGEL, 1 ex. SMNS. – Kathmandu valley, Bagmati river, 1200 m, 11. X. 1992 leg. WEIPERT, 3 ex. SMNS. – Kathmandu, Safaripark, 1300 m, 6. VI. 1995 leg. WEIGEL, 10 ex. NKME, 2 ex. SMNS. – Kathmandu, Bagmati river, 1300 m, 27. IV. & 6. VI. 1995 leg. HARTMANN & WEIGEL, 4 ex. NKME.

Distribution: India, Burma, Thailand; Nepal (KASZAB 1970, 1973, 1977).

2.5. *Gonocephalum crassepunctatum* Kaszab 1952 (Figs. 3–4)

Material: Pipley, 27. VI. 1968 leg. WOYNAROVICH, 1 ex. HNHM (det. KASZAB).

Distribution: India, Bhutan, Burma, Tonkin; Nepal (KASZAB 1973).

2.6. *Gonocephalum curiosum* Kaszab 1952 (Figs. 7–8)

Material: Royal Chitwan Nat. Park, island Jungle Resort, 240 m, 21.–22. VI. 1993 leg. CSORBA & HREBLAY, 1 ex. HNHM (det. MERKL).

Distribution: Described from India, Assam, Burma; Nepal (new record).

2.7. *Gonocephalum dasiforme* Kaszab 1952 (Figs. 26–27)

Material: Bheri zone, Bheri bank S Surkhet, 650 m, 3. VI. 1995 leg. WEIPERT, 1 ex. NKME. – Kaski Distr., Ulleri S Ghorepani, 2000 m, 16. VI. 1993 leg. SCHMIDT, 1 ex. SMNS. – Kathmandu, Patibhanjyang, 6–7500 ft., 12. VI. 1967 Can. Nepal Exp., 1 ex. BRIO.

Remarks: The last specimen from Kathmandu was labelled by the late Dr. KASZAB as *kuehnelti* Kaszab 1961, described from the Karakorum and Kashmir. When describing *kuehnelti*, KASZAB (1961) pointed to the similarity of both *kuehnelti* and *dasiforme*. Judged from the descriptions, both above listed records from Nepal fit better to the description of *dasiforme*.

Distribution: India, Sri Lanka; Nepal (new record).

2.8. *Gonocephalum depressum* (Fabricius 1801) (Figs. 5–6)

Material: Dailekh Distr., Dailekh, S Katia Khola, 800 m, 31. V. 1995 leg. HARTMANN, 1 ex. NKME. – Myagdi Distr., Myagdi Khola valley, Tatopani to Beni, 900–800 m, 31. V. 1995 leg. MARTENS & SCHAWALLER, 5 ex. SMNS. – Myagdi Distr., Babichor to Beni, 1000 m, 16. III. 1994 leg. AHRENS, 6 ex. SMNS. – Myagdi Distr., Kali Gandaki valley, Beni to Tiplyan, 1000 m, 14. III. 1994 leg. AHRENS, 4 ex. SMNS. – Myagdi Distr., Kali Gandaki valley, Tatopani to Beni, 1000 m, 29. X. 1992 leg. SCHMIDT, 1 ex. SMNS. – Pokhara, 900 m, 17. VI. 1993 leg. AHRENS, 2 ex. SMNS. – Kaski Distr., Pokhara, Phewa lake, 800 m, 28.–31. III. 1994 leg. AHRENS, 1 ex. SMNS. – Marsyandi valley, Besisahar to Chamje, 800–1300 m, 20. IX. 1992 leg. SCHMIDT, 1 ex. SMNS. – Marsyandi valley, Besisahar, 800 m, 18. IX. 1992 leg. WEIGEL, 1 ex. SMNS. – Lamjung Distr., Marsyandi valley, Nayagaon-Bahundanda, 1150 m, 10. IV. 1980 leg. MARTENS & AUSOBSKY, 1 ex. SMNS. – Gorkha Distr., Darondi Khola, Doreni to Motar, 900–750 m, 13. VIII. 1983 leg. MARTENS & SCHAWALLER, 1 ex. SMNS. – Gorkha Distr., Arughat, 600 m, 26. VII. 1983 leg. MARTENS & SCHAWALLER, 1 ex. SMNS. – Gorkha Distr., Arughat to Suteo, 600–700 m, 27. VII. 1983 leg. MARTENS & SCHAWALLER, 1 ex. SMNS. – Dhading Distr., Ankhu Khola valley, Ankhu Sangu to Sellentar, 530–750 m, 26. VII. 1983 leg. MARTENS & SCHAWALLER, 1 ex. SMNS. – Dhading Distr., descent from Kordunje to Ankhu Kho-

la valley, 900–650 m, 24. VII. 1983 leg. MARTENS & SCHAWALLER, 3 ex. SMNS. – Kathmandu valley, Ganabahal and Baneshwar, 1350 m, 17.–20. VII. 1983 leg. MARTENS & SCHAWALLER, 1 ex. SMNS. – Therai, Amlekhgani, 7.–10. X. 1972 leg. FRANZ, 1 ex. HNHM. – Arun valley, Phalicot, 550 m, 13. VI. 1983 leg. BRANCUCCI, 1 ex. NHMB. – Arun valley, Tumlingtar, 450 m, 26. V. 1983 leg. BRANCUCCI, 2 ex. NHMB. – Arun valley, Tumlingtar to Khandbari, 450–1100 m, 27. V. 1983 leg. BRANCUCCI, 1 ex. NHMB.

Distribution: Southeastern Asia, Philippines, New Guinea; Nepal (KASZAB 1973, 1975 a).

2.9. *Gonocephalum gracile* (Bates 1879) (Figs. 40–41)

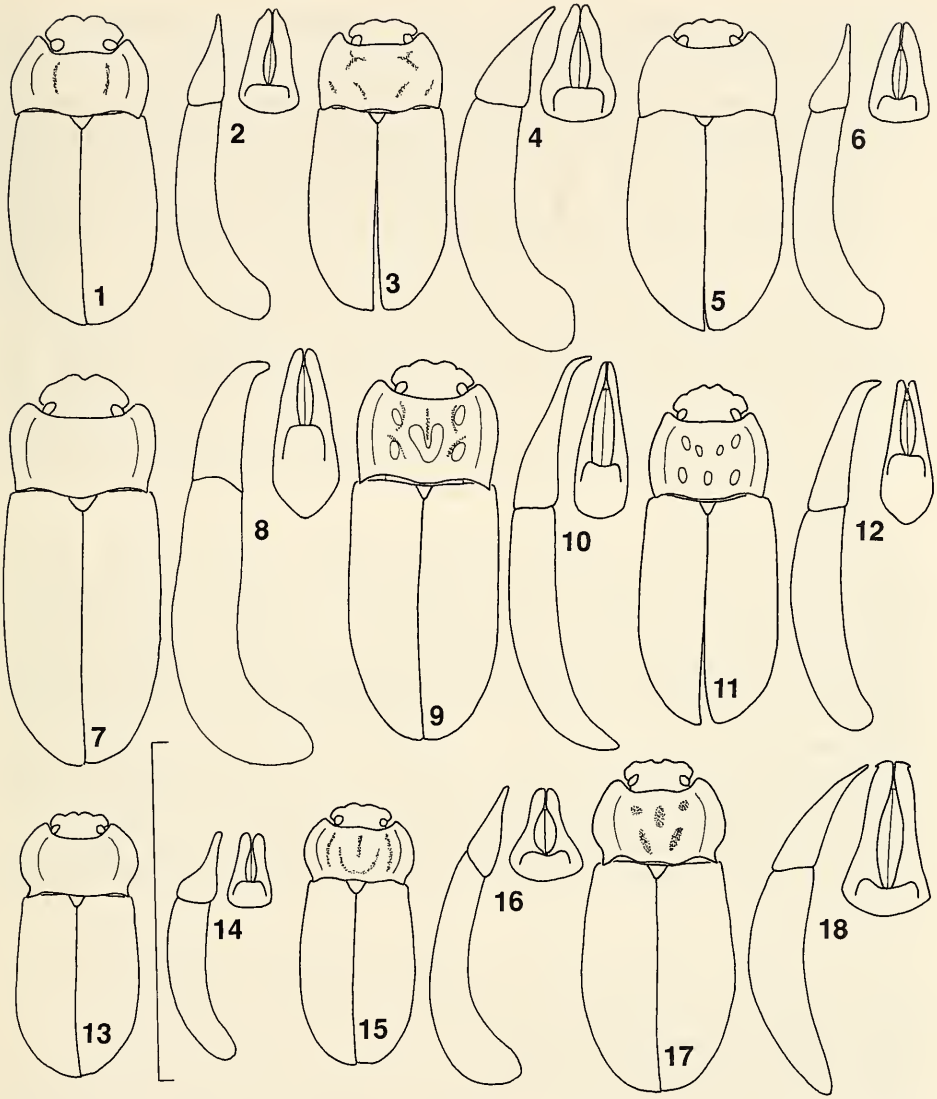
Material: Karnali zone, Gamgadhi, 2200–2600 m, 30. VI. 1995 leg. AHRENS, 60 ex. SMNS. – Jumla Distr., Jumla, 2400 m, 10. VII. 1995 leg. AHRENS, 80 ex. SMNS. – Jumla Distr., Jumla, 2300–2800 m, 30. IV. 1995 leg. HARTMANN, WEIGEL & WEIPERT, 28 ex. NKME. – Jumla Distr., Jumla, Tila river, 2300 m, 29. IV. 1995 leg. HARTMANN, 6 ex. NKME, 1 ex. SMNS. – Jumla Distr., Nagma W Jumla, 1800–2000 m, 26. V. 1995 leg. WEIPERT, 4 ex. NKME. – Jumla Distr., Tatopani, Tila river, 2100–2200 m, 24.–25. V. 1995 leg. WEIGEL, 18 ex. NKME, 1 ex. SMNS. – Jumla Distr., Jumla, 2200–2400 m, 23.–24. V. 1995 leg. WEIPERT, 15 ex. NKME, 5 ex. SMNS. – Jumla Distr., Tatopani, Tila Khola, 2300 m, 11. VII. 1995 leg. AHRENS, 32 ex. SMNS. – Jumla Distr., Tatopani, 2200 m, 25. V. 1995 leg. WEIPERT, 6 ex. NKME. – Jumla Distr., 12 km E Jumla, Jharjwala, 2500 m, 1. V. 1995 leg. HARTMANN & WEIGEL, 5 ex. NKME. – Jumla Distr., Garjyakot, 2500–2800 m, 1. V. 1995 leg. WEIPERT, 6 ex. NKME, 1 ex. SMNS. – Kalikot Distr., 3 km S Jubita, 1850 m, 26. V. 1995 leg. HARTMANN & WEIGEL, 2 ex. NKME. – Mustang Distr., below Serku W Muktinath, 3400 m, 21. IV. 1980 leg. MARTENS & AUSOBSKY, 5 ex. SMNS. – Mustang Distr., Muktinath, 3800 m, 20. X. 1992 leg. SCHMIDT, 4 ex. SMNS. – Mustang Distr., Muktinath, 3200–3300 m, 6. VI. 1993 leg. AHRENS, 2 ex. SMNS. – Mustang Distr., Kali Gandaki valley, Kagbeni, 2900 m, 9. VI. 1993 leg. AHRENS, 14 ex. SMNS. – Mustang Distr., Jomosom, 2750 m, 30. IX. 1983 leg. SMETANA & LÖBL, 1 ex. BRIO. – Mustang Distr., Jomosom, 2800 m, 9. VI. 1977 leg. MÜTING, 4 ex. SMNS. – Mustang Distr., ascent from Tukche to Thaksang, 2650–2950 m, 26. IV. 1980 leg. MARTENS & AUSOBSKY, 1 ex. SMNS. – Mustang Distr., Tukche, 3400 m, 15. IV. 1979 leg. KIRSCHBAUM, 3 ex. SMNS. – Mustang Distr., 3 km SE Marpha, 2650 m, 1. X. 1983 leg. SMETANA & LÖBL, 13 ex. BRIO. – Mustang Distr., Marpha, 2700 m, 11. X. 1980 leg. STÜCKE, 6 ex. SMNS. – Mustang Distr., Marpha, 2660 m, 2. X. 1992 leg. WEIPERT, 1 ex. SMNS. – Mustang Distr., Purano Marpha, 3200 m, 6.–7. VII. 1973 leg. MARTENS, 1 ex. SMNS. – Mustang Distr., Purano Marpha, 3200 m, 9.–11. V. 1995 leg. MARTENS & SCHAWALLER, 6 ex. SMNS. – Mustang Distr., Kali Gandaki valley S Marpha, 2600 m, 8. V. 1995 leg. MARTENS & SCHAWALLER, 7 ex. SMNS. – Annapurna region, Akkara Bhatti, 2800 m, 1. X. 1992 leg. WEIPERT, 1 ex. SMNS. – Manang Distr., Manang airstrip, 3200 m, 26. IX. 1983 leg. SMETANA & LÖBL, 1 ex. BRIO. – Manang Distr., Pisang to airstrip, 3000–3300 m, 18. IV. 1980 leg. MARTENS & AUSOBSKY, 2 ex. SMNS. – Manang Distr., Manang, 3300 m, 4. VI. 1993 leg. AHRENS, 4 ex. SMNS. – Manang Distr., Pisang, XI. 1977 leg. FRANK, 1 ex. SMNS. – Manang Distr., Pisang, 3180 m, 22. IX. 1992 leg. HARTMANN, 2 ex. SMNS. – Manang Distr., Chame to Pisang, 2700–3200 m, 23. IX. 1992 leg. WEIPERT, 1 ex. SMNS. – Manang Distr., Bhratang to Pisang, 3000 m, 27. IX. 1992 leg. SCHMIDT, 8 ex. SMNS.

Distribution: Northern India, Tibet; Nepal (KASZAB 1973, 1975 a, 1977).

2.10. *Gonocephalum hauschildi* Kaszab 1952 (Figs. 22–23)

Material: Trisuli valley, 20 km NE Trisuli, 900 m, 23. V. 1995 leg. FÁBIÁN & RONKAY, 16 ex. HNHM (det. MERKL), 2 ex. SMNS. – Gorkha Distr., Gorkha, 26.–31. V. 1992 leg. JENIŠ, 1 ex. CHBH.

Distribution: India, Thailand; Nepal (new record).



Figs. 1–18. Body shape and aedeagus of *Gonocephalum* species. – 1–2. *bilineatum* (Mai Khola); – 3–4. *crassepunctatum* (Pipley); – 5–6. *depressum* (Tatopani-Beni); – 7–8. *curiosum* (Chitwan); – 9–10. *woynarovichi* (Nepalganj); – 11–12. *nepalicum* (Pokhara); – 13–14. *belli* (Khibang-Boghara); – 15–16. *himalayense* (Labubesi); – 17–18. *subspinosum* (Gitang Khola). – Scale: 10 mm (body shape), 2 mm (aedeagus).

2.11. *Gonocephalum helopioides* Fairmaire 1894 (Figs. 19–20)

Material: Koshi zone, Lumbughat to Baiseghat, 450 m, 15. VI. 1985 leg. Brancucci, 6 ex. NHMB, 2 ex. SMNS.

Distribution: India, Burma; Nepal (new record).

2.12. *Gonocephalum himalayense* Kaszab 1952 (Figs. 15–16)

Gonocephalum tonkinense Kaszab 1952 syn.?

Material: Myagdi Distr., Myagdi Khola valley, Khibang bridge to Boghara, 1400–1800 m, 20. V. 1995 leg. Martens & Schawaller, 9 ex. SMNS. – Myagdi Distr., Myagdi Khola valley S Boghara, 1400 m, 27.–28. V. 1995 leg. Martens & Schawaller, 2 ex. SMNS. – Myagdi Distr., Bim to Darbang, 1150–1000 m, 30. V. 1995 leg. Martens & Schawaller, 1 ex. SMNS. – Myagdi Distr., Bhuji Khola, Bobang, 1600 m, 5. III. 1994 leg. Ahrens, 2 ex. SMNS. – Myagdi Distr., Babichor, 1000 m, 15. III. 1994 leg. Ahrens, 1 ex. SMNS. – Myagdi Distr., Kali Gandaki valley, Tatopani, 1100 m, 18. III. 1994 leg. Ahrens, 1 ex. SMNS. – Mustang Distr., Kali Gandaki valley, Dana, 1500 m, 12. VI. 1993 leg. Schmidt, 1 ex. SMNS. – Lamjung Distr., Marsyandi valley, Dharapani, 1580–1850 m, 12. IV. 1980 leg. Martens & Ausobsky, 3 ex. SMNS, 1 ex. HNHM (det. Kaszab). – Marsyandi valley, Besisahar to Chamje, 800–1300 m, 20. IX. 1992 leg. Schmidt, 1 ex. SMNS. – Gorkha Distr., Buri Gandaki valley, Arughat, 600 m, 26. VII. 1983 leg. Martens & Schawaller, 1 ex. SMNS. – Gorkha Distr., Buri Gandaki valley, Labubesi to Gorlabesi, 900–1000 m, 29. VII. 1983 leg. Martens & Schawaller, 23 ex. SMNS. – Kathmandu, 1400 m, 15. IV. 1962 leg. Ebert, 1 ex. ZSM (*tonkinense* det. Kaszab). – Arun valley, Lamobagar Gao, 1400 m, 28.–31. V. 1980 leg. Wittmer, 1 ex. HNHM.

Remarks: The series from Dharapani was identified by the late Dr. Kaszab as *himalayense*, the single specimen from Kathmandu as *tonkinense*. According to Kaszab (1952) both "species" are mainly separated by the pronotal shape, in particular by the shape of the posterior corner. When comparing more numerous material, this character seems to be quite variable and probably both names represent the same biospecies. Even if synonymy is not established in this paper, I list all material under *himalayense*.

Gonocephalum himalayense is somewhat similar from the outer appearance to *belli* Kaszab 1952. However, in *himalayense* the pronotum is broader and its disk is distinctly uneven, additionally the aedeagus is distinctly different.

Distribution: Northern India, Sikkim, Bhutan; Nepal (Kaszab 1970 sub *tonkinense*, 1973).

2.13. *Gonocephalum hoffmannseggi* Steven 1829 (Figs. 28–31)

Gonocephalum moluccanum Blanchard 1853 syn.?
Gonocephalum kuluanum Kaszab 1952 syn.?
Gonocephalum biseriatum Kaszab 1975 syn.?

Material: Therai, Amlekhgani, 7.–10. X. 1972 leg. Franz, holotype ♂ of *biseriatum* Kaszab 1975 HNHM. – Bheri zone, Nepalganj, 200 m, 17.–20. VI. 1995 leg. Ahrens, 9 ex. SMNS. – Hetara, Pipley, 26. V.–5. VI. 1969 leg. Woynarovich, 1 ♀ HNHM (*moluccanum* det. Kaszab). – Chitwan Distr., Sauraha, Chitwan National Park, 20.–25. V. 1992 leg. Jeniš, 5 ex. CHBH. – Rapti valley, 300 m, 27. III. 1962 leg. Ebert, 1 ex. ZSM (*kuluanum* det. Kaszab). – Kathmandu, 1400 m, 21.–25. VIII. 1968 leg. Müting, 1 ♀ SMNS.

Remarks: The "species" *hoffmannseggi* Steven 1829 (widespread), *moluccanum* Blanchard 1853 (widespread), *kuluanum* Kaszab 1952 (northern India) and *biseriatum* Kaszab 1975 (Nepal) are separated by Kaszab (1952, 1975) mainly by the dentation of the male tibiae (protibia with a more or less developed single tooth at the inner margin, meso- and metatibia with more or less developed smaller teeth/granules), and to a lesser extent by the pattern of the dorsal setation and granulation. However, when comparing huge material (collections HNHM, SMNS) of this

group from different Oriental localities, it is nearly impossible to find significant morphological differences. The aedeagi are quite uniform and females cannot be separated. The late Dr. KASZAB identified such uniform material, even single females, partly as *moluccanum*, *kuluanum* or *hoffmannseggi*. This confusion cannot be cleared in the frame of this paper, thus I assign all Nepalese material to *hoffmannseggi*, the oldest valid name for this "group".

Distribution: Southeastern continental Asia, Sri Lanka, Taiwan, Philippines, Sundas, New Guinea; Nepal (KASZAB 1970 sub *hoffmannseggi* and *kuluanum*).

2.14. *Gonocephalum indicum* Kaszab 1952 (Figs. 34–35)

Material: Jumla Distr., Tatopani, Tila river, 2200 m, 24. V. 1995 leg. WEIGEL, 2 ex. NKME. – Jumla Distr., 12 km E Jumla, Jharjwala, 2500 m, 1. V. 1995 leg. HARTMANN, 1 ex. SMNS.

Distribution: India, Sri Lanka (KASZAB 1952); Nepal (new record).

2.15. *Gonocephalum nepalicum* Kaszab 1973 (Figs. 11–12)

Material: Bheri zone, Nepalganj, 200 m, 17.–20. VI. 1995 leg. AHRENS, 1 ex. SMNS. – Bheri zone, Nepalganj Babal river, 500 m, 3. VI. 1995 leg. WEIGEL, 1 ex. NKME. – Myagdi Distr., Myagdi Khola valley, Khibang bridge to Boghara, 1400–1800 m, 20. V. 1995 leg. MARTENS & SCHAWALLER, 16 ex. SMNS. – Myagdi Distr., lower Marang Khola, Bim, 1150 m, 29. V. 1995 leg. MARTENS & SCHAWALLER, 1 ex. SMNS. – Myagdi Distr., Bim to Darbang, 1150–1000 m, 30. V. 1995 leg. MARTENS & SCHAWALLER, 2 ex. SMNS. – Myagdi Distr., Myagdi Khola valley, Tatopani to Beni, 900–800 m, 31. V. 1995 leg. MARTENS & SCHAWALLER, 2 ex. SMNS. – Myagdi Distr., Ghara, Ghorepani, 1800 m, 19. III. 1994 leg. AHRENS, 15 ex. SMNS. – Myagdi Distr., Bhuji Khola, Bobang, 1600 m, 5. III. 1994 leg. AHRENS, 1 ex. SMNS. – Myagdi Distr., Phalai Gaon, 1800 m, 13. III. 1994 leg. AHRENS, 2 ex. SMNS. – Myagdi Distr., Lulang to Phalai Gaon, 2100–1850 m, 12. III. 1994 leg. AHRENS, 1 ex. SMNS. – Myagdi Distr., Karbang to Burtibang, 700–1000 m, 4. III. 1994 leg. AHRENS, 1 ex. SMNS. – Myagdi Distr., Kali Gandaki valley, Tatopani, 1100 m, 18. III. 1994 leg. AHRENS, 1 ex. SMNS. – Myagdi Distr., Kali Gandaki valley, Beni to Tiplyan, 1000 m, 14. III. 1994 leg. AHRENS, 1 ex. SMNS. – Kaski Distr., Ulleri S Ghorepani, 2000 m, 16. VI. 1993 leg. SCHMIDT, 1 ex. SMNS. – Kaski Distr., N Pokhara, below Sikles, 1700 m, 14. V. 1993 leg. SCHMIDT, 4 ex. SMNS. – Kaski Distr., E Pokhara, Kalikastan, 1500 m, 9. V. 1993 leg. SCHMIDT, 1 ex. SMNS. – Kaski Distr., Pokhara, Phewa lake, 800 m, 28.–31. III. 1994 leg. AHRENS, 6 ex. SMNS. – Kaski Distr., Pokhara, Sharankot, 1500 m, 28. II. 1994 leg. AHRENS, 10 ex. SMNS. – Gorkha Distr., Buri Gandaki valley, Arughat to Suteo, 600–700 m, 27. VII. 1983 leg. MARTENS & SCHAWALLER, 1 ex. SMNS. – Dhading Distr., Ankhu Khola valley, Ankhu Sangu, 650 m, 24.–25. VII. 1983 leg. MARTENS & SCHAWALLER, 2 ex. SMNS. – Dhading Distr., Thorpu to Kordunje, 1300–1400 m, 24. VII. 1983 leg. MARTENS & SCHAWALLER, 2 ex. SMNS. – Nuwakot Distr., Trisuli, 600–650 m, 21.–22. VII. 1983 leg. MARTENS & SCHAWALLER, 9 ex. SMNS. – Kathmandu, Safaripark, 1300 m, 6. VI. 1995 leg. WEIGEL, 2 ex. NKME. – Kathmandu, Bagmati river, 1300 m, 6. VI. 1995 leg. HARTMANN, 2 ex NKME, 1 ex. SMNS. – Arun valley, Arunthan to Tumlingtar, 1300–450 m, 10.–11. VI. 1983 leg. BRANCUCCI, 1 ex. NHMB. – Dhankuta to Hille, 1150–2000 m, 24.–25. V. 1983 leg. BRANCUCCI, 1 ex. NHMB. – Taplejung Distr., Yektin to Worebung pass, 1500–1800 m, 21. IV. 1988 leg. MARTENS & SCHAWALLER, 1 ex. SMNS. – Taplejung Distr., Kabeli Khola valley, below Limbudin, 950 m, 22.–23. IV. 1988 leg. MARTENS & SCHAWALLER, 3 ex. SMNS. – Ilam Distr., Mai Khola valley, ascent from river bank to Gola Kharka, 470–900 m, 8. IV. 1988 leg. MARTENS & SCHAWALLER, 7 ex. SMNS. – Ilam Distr., Nodia Khola valley, N Siwalik Mts., 320 m, 6. IV. 1988 leg. MARTENS & SCHAWALLER, 2 ex. SMNS. – Ilam Distr., Ilam to Parbate, 1250–1450 m, 23. VIII. 1983 leg. MARTENS & DAAMS, 1 ex. SMNS.

Distribution: Nepal (Kaszab 1973, 1975 a, 1977).

2.16. *Gonocephalum oculare* Kaszab 1952 (Figs. 36–37)

Material: Kathmandu, Bagmati river, 1300 m, 27. IV. & 6. VI. 1995 leg. Hartmann, 2 ex. NKME. – Kathmandu, Bagmati river, 1200 m, 11. X. 1992 leg. Weipert, 1 ex. SMNS. – Kathmandu, cottage Aurora, 1340 m, 21.–22. IX. 1994 leg. Csorba & Ronkay, 1 ex. HNHM.

Distribution: India; Nepal (Kaszab 1970, 1977).

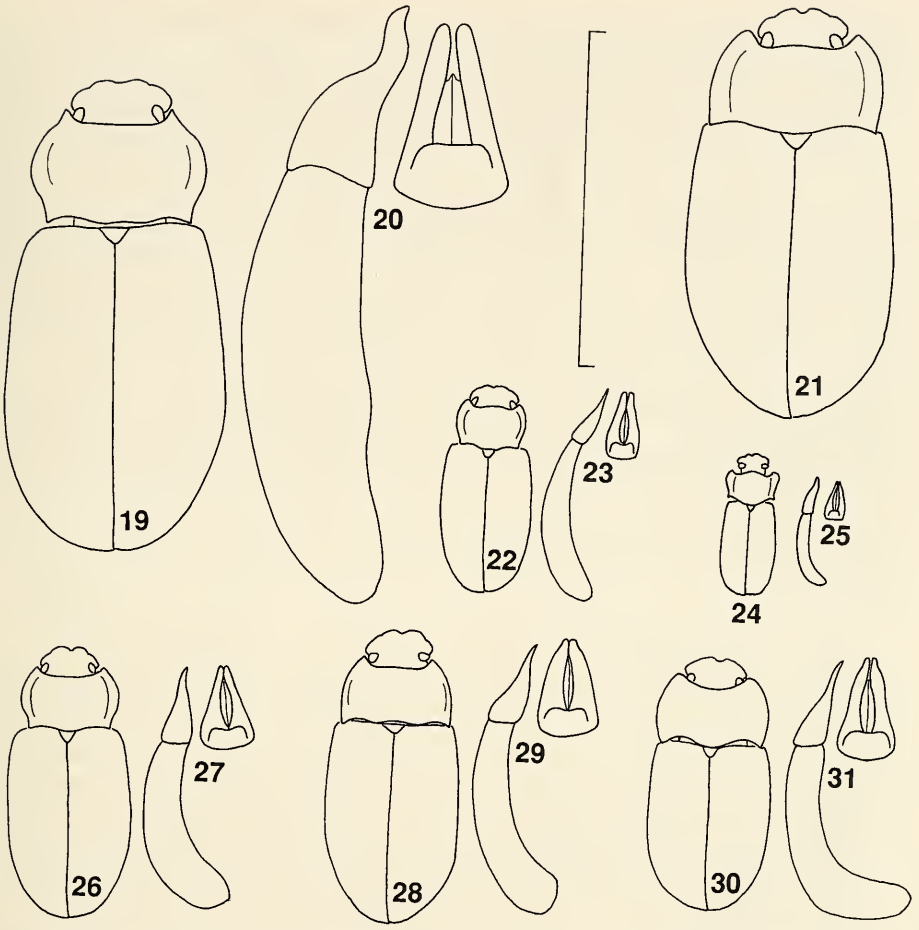
2.17. *Gonocephalum parcesetosum* Kaszab 1952 (Figs. 42–43)

Material: 6 km NW Narainghat, 250 m, 30. V. 1976 leg. Baroni Urbani & Wittmer, 1 ex. HNHM.

Distribution: India; Nepal (new record).

2.18. *Gonocephalum roseni* Kaszab 1952 (Figs. 44–45)

Material: Dailekh Distr., Dailekh, S Katia Khola, 800 m, 31. V. 1995 leg. Hartmann & Weigel, 3 ex. NKME. – Myagdi Distr., Galkot-Kabrang, 1000 m, 3. III. 1994 leg. Ahrens, 15 ex. SMNS. – Myagdi Distr., Babichor, 1000 m, 15. III. 1994 leg. Ahrens, 7 ex. SMNS. – Myagdi Distr., Babichor-Beni, 1000 m, 16. III. 1994 leg. Ahrens, 17 ex. SMNS. – Myagdi Distr., Dhara Khola, Ulag, 2150–2400 m, 11. III. 1994 leg. Ahrens, 9 ex. SMNS. – Myagdi Distr., Darbang, 1100 m, 14. III. 1994 leg. Ahrens, 12 ex. SMNS. – Myagdi Distr., Tatopani in Myagdi Khola valley, 900 m, 30. V. 1995 leg. Martens & Schawaller, 3 ex. SMNS. – Myagdi Distr., Myagdi Khola valley between Tatopani and Beni, 900–800 m, 31. V. 1995 leg. Martens & Schawaller, 5 ex. SMNS. – Myagdi Distr., Myagdi Khola valley S Boghara, 1400 m, 27.–28. V. 1995 leg. Martens & Schawaller, 9 ex. SMNS. – Myagdi Distr., Myagdi Khola valley SE Darbang, 1000 m, 30. V. 1995 leg. Martens & Schawaller, 2 ex. SMNS. – Myagdi Distr., Mahabir to Beg Khola, 1100–1050 m, 15. V. 1995 leg. Martens & Schawaller, 4 ex. SMNS. – Myagdi Distr., Tatopani, Kali Gandaki valley, 1100 m, 18. III. 1994 leg. Ahrens, 1 ex. SMNS. – Mustang Distr., Lethe to Ghasa, 1900–2400 m, 2. V. 1980 leg. Martens & Ausobsky, 3 ex. SMNS. – Mustang Distr., Lethe to Dana, 2200–1500 m, 3. X. 1992 leg. Weipert, 1 ex. SMNS. – Mustang Distr., Dana, 1500 m, 12. VI. 1993 leg. Schmidt, 1 ex. SMNS. – Mustang Distr., Dana, 1300–1500 m, 4. V. 1995 leg. Martens & Schawaller, 8 ex. SMNS. – Mustang Distr., Ghasa, 2100–1700 m, 14. V. 1995 leg. Martens & Schawaller, 1 ex. SMNS. – Kali Gandaki valley, Tatopani, 1100 m, 13. VI. 1993 leg. Ahrens, 2 ex SMNS. – Kali Gandaki valley, Tatopani-Beni, 1000 m, 29. X. 1992 leg. Schmidt, 1 ex. SMNS. – N Pokhara, Madi Khola, below Sikles, powerstation, 1500 m, 4. VIII. 1995 leg. Jäger & Schmidt, 4 ex. NKME, 4 ex. SMTD. – N Pokhara, below Sikles, 1700 m, 14. V. 1993 leg. Schmidt, 2 ex. SMNS. – N Pokhara, Sikles, 2000 m, 15. V. 1993, 1 ex. SMNS. – Pokhara, lake, 850 m, 10. V. 1993 leg. Schmidt, 2 ex. SMNS. – Lamjung Distr., Besisahar, 900 m, 17. X. 1983 leg. Smetana & Löbl, 1 ex. BRIO. – Lamjung Distr., Besisahar, 800 m, 18. IX. 1992 leg. Weigel, 1 ex. SMNS. – Lamjung Distr., Besisahar to Chamje, 800–1300 m, 20. IX. 1992 leg. Schmidt, 32 ex. SMNS. – Annapurna region, Birethanti, 1400 m, 8. X. 1992 leg. Weipert, 2 ex. SMNS. – Annapurna region, Bagarchap, 1700–2200 m, 25. IX. 1992 leg. Schmidt, 2 ex. SMNS. – Gorkha/Dhading Distr., Buri Gandaki valley, Jagat to opposite Pangshing, 1300–1650 m, 31. VII. 1983 leg. Martens & Schawaller, 1 ex. SMNS. – Dhading Distr., Buri Gandaki valley, opposite Pangshing to bridge below Nyak, 1600–1800 m, 1. VIII. 1983 leg. Martens & Schawaller, 1 ex. SMNS. – Dhading Distr., below Samari Banjyang, 1000–1300 m, 23. VII. 1983 leg. Martens & Schawaller, 4 ex. SMNS. – Kathmandu valley, Burhanilkanth, 1440–1650 m, 16. VI. 1983 leg. Brancucci, 1ex. NHMB. – Kathmandu valley, Godavari, 5000 ft., 15. VIII. 1967 Can. Nepal. Exp., 1 ex. BRIO. – Kathmandu, Bag-



Figs. 19–31. Body shape and aedeagus of *Gonocephalum* species. – 19–20. *helopioides* (Lumbughat); – 21. *tenuipes* (Tumlingtar) (male not available); – 22–23. *hauschildi* (Trisuli); – 24–25. *birmanicum* (Arughat); – 26–27. *dasiforme* (Ulleri); – 28–29. *hoffmannseggi* (*moluccanum* det. Kaszab) (Thailand); – 30–31. *hoffmannseggi* (*biseriatum* holotype) (Amlekhgani). – Scale: 10 mm (body shape), 2 mm (aedeagus).

mati river, 1300 m, 27. IV. 1995 leg. Weipert, 2 ex. NKME. – Kathmandu, Bagmati river, 1300 m, 6. VI. 1995 leg. Hartmann, 1 ex. NKME. – Jiri, Kenja, 16. X. 1990 leg. Hubicka, 1 ex. SMNS. – Arun valley, Hedagna to Num, 800 m, 16. VI. 1983 leg. Brancucci, 1 ex. NHMB. – Sankhua Sabah Distr., Arun valley bottom between Hedagna and Num, 950–1000 m, 6.–8. VI. 1988 leg. Martens & Schawaller, 1 ex. SMNS. – Taplejung Distr., confluence of Kabeli and Tada Khola, 1000–1050 m, 23.–25. IV. 1988 leg. Martens & Schawaller, 1 ex. SMNS. – Taplejung Distr., from Iwa Khola bridge to Sablako pass, 940–1200 m, 22. IV. 1988 leg. Martens & Schawaller, 5 ex. SMNS. – Ilam Distr., Gitang Khola valley, 1750 m, 11.–13. IV. 1980 leg. Martens & Schawaller, 20 ex. SMNS.

Distribution: Northern India, Bhutan; Nepal (Kaszab 1970, 1973, 1977).

2.19. *Gonocephalum simulathrix* (Fairmaire 1891) (Figs. 38–39)

Gonocephalum martensi Kaszab 1977 **n. syn.**

Material: Dolpo, Suli Gad valley, 2600–3000 m, 7.–9. VI. 1973 leg. Martens, 6 ex. SMF, 2 ex. HNHM (det. Kaszab). – Dolpo, Suli Gad valley, 2600–3000 m, 7.–9. VI. 1973 leg. Martens, 6 paratypes of *martensi* SMF, 1 paratype of *martensi* HNHM.

Remarks: When describing *martensi*, Kaszab (1977) compared this species with *koreanum* Kaszab 1952 because of similar head structure and the lack of secondary sexual characters on the male pro- and mesotibia. However, the studied males of the type series possess on the tibiae such a secondary character (dentation) identical with such a structure in *simulathrix*. Additionally I cannot find distinct specific differences between the two series from the same locality, thus *martensi* Kaszab 1977 is considered a junior synonym of *simulathrix* (Fairmaire 1891).
Gonocephalum simulathrix (Fairmaire 1891) and *gracile* (Bates 1879) show a certain morphological similarity and it should be studied in detail whether the "weak" differences (proportion of pronotum, proportions of parameres) are really specific or not.

Distribution: Northwestern India, China; Nepal (Kaszab 1975 a, 1977).

2.20. *Gonocephalum subspinosum* (Fairmaire 1894) (Figs. 17–18)

Material: Myagdi Distr., Myagdi Khola valley, Boghara, 1800 m, 26. V. 1995 leg. Martens & Schawaller, 3 ex. SMNS. – Myagdi Distr., lower Marang Khola, Bim, 1150 m, 29. V. 1995 leg. Martens & Schawaller, 1 ex. SMNS. – Mustang Distr., Kali Gandaki valley, Tatopani, 1100 m, 22. VII. 1995 leg. László & Ronkay, 1 ex. HNHM. – Mustang Distr., Kali Gandaki valley, Tatopani, 1200 m, 15. V. 1995 leg. Martens & Schawaller, 1 ex. SMNS. – Kaski Distr., Sikles, 1600–2000 m, 12.–16. V. 1993 leg. Ahrens, 1 ex. SMNS. – Dhading Distr., Thorpu to Kordunje, 1300–1400 m, 24. VII. 1983 leg. Martens & Schawaller, 1 ex. SMNS. – Kathmandu valley, Godavari, 6000 ft., 24. VII. 1967 Can. Nepal. Exp., 2 ex. BRIO. – Kathmandu valley, Godavari, 26. VI. 1968 leg. Woynarovich, 1 ex. HNHM. – Kathmandu valley, Kathmandu Baneshwar, 1350 m, 18. IV. 1995 leg. Martens & Schawaller, 1 ex. SMNS. – Arun valley, Hedagna to Num, 800 m, 16. VI. 1983 leg. Brancucci, 1 ex. NHMB. – Sankhua Sabha Distr., below Karmarang to Hedagna, 950–1350 m, 5. VI. 1988 leg. Martens, 2 ex. SMNS. – Taplejung/Terhatum Distr., Mitilung to Dumhan, 950–750 m, 15. IX. 1983 leg. Martens & Daams, 1 ex. SMNS. – Ilam Distr., from northern feet of Siwalik Mts. to Nodia Khola valley, 240–320 m, 6. IV. 1988 leg. Martens & Schawaller, 1 ex. SMNS. – Ilam Distr., Mai Khola valley, 470 m, 7. IV. 1988 leg. Martens & Schawaller, 1 ex. SMNS. – Ilam Distr., Gitang Khola, 1900–2100 m, 31. III. 1980 leg. Martens & Ausobsky, 1 ex. SMNS.

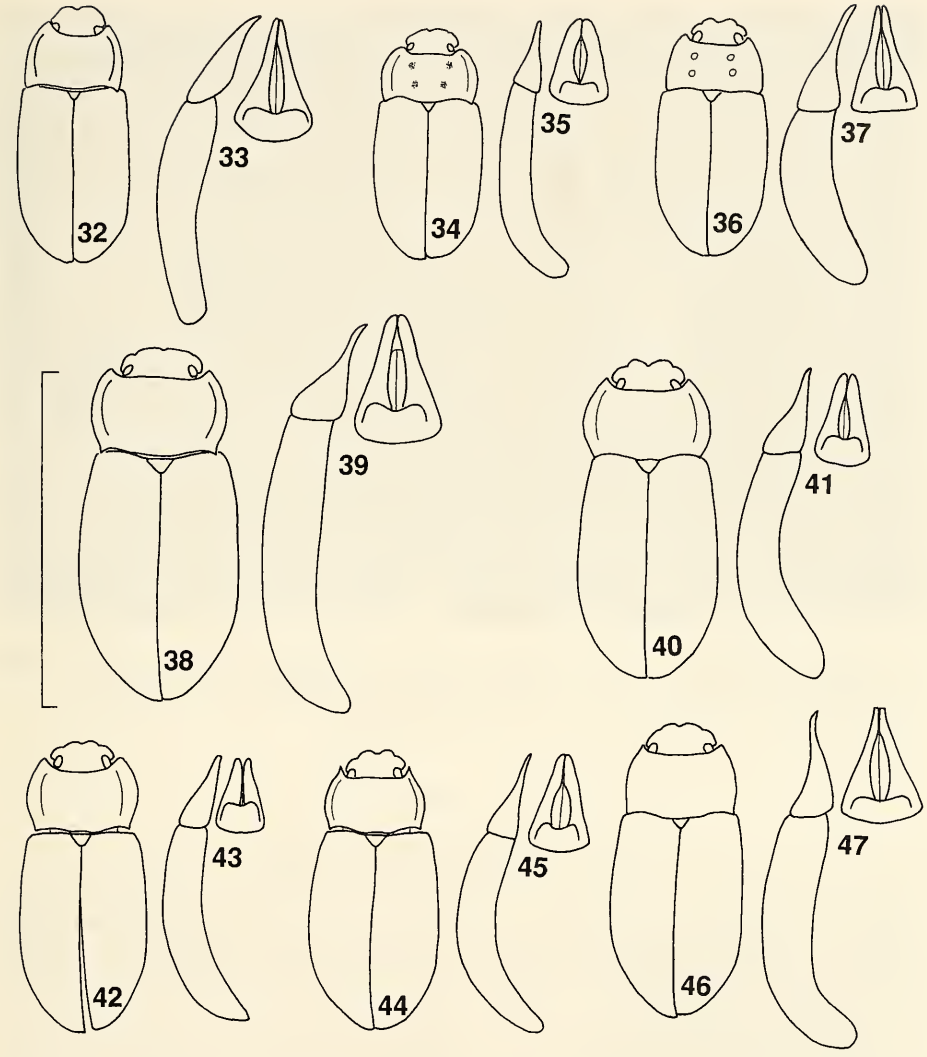
Distribution: Southeastern Asia, Sri Lanka, Taiwan, Sundas; Nepal (Kaszab 1970, 1973).

2.21. *Gonocephalum tenuipes* Kaszab 1952 (Fig. 21)

Material: Sankhua Sabha Distr., Arun valley, Tumlingtar, 450 m, 26. V. 1983 leg. Brancucci, 1 ♀ SMNS.

Remarks: Only this female specimen is available from Nepal, thus the aedeagus cannot be figured.

Distribution: Burma; Nepal (new record).



Figs. 32–47. Body shape and aedeagus of *Gonocephalum* species. – 32–33. *civicum* (Dailekh); – 34–35. *indicum* (Jumla); – 36–37. *oculare* (Uttar Pradesh); – 38–39. *simulathrix* (Kashmir); – 40–41. *gracile* (Marpha); – 42–43. *parcesetosum* (Narainghat); – 44–45. *roseni* (Boghara); – 46–47. *wittmeri* (Barpak). – Scale: 10 mm (body shape), 2 mm (aedeagus).

2.22. *Gonocephalum tuberculatum* (Hope 1831)

Material: Not seen from Nepal.

Remarks: Kaszab (1970) recorded *tuberculatum* (Hope 1831) from Nepal, but described later the common *nepalicum* Kaszab 1973 from Nepal and pointed out the differences between these species. If they really represent distinct species, then probably a taxonomic confusion exists. Hope (1831) described *tuberculatum* from Nepal (sub *Opatrum*), so this is the valid name for the common Nepalese species and prob-

ably *nepalicum* is a junior synonym. Material which is not conspecific from other regions, called hitherto *tuberculatum*, is in this case still without a valid name. Until the *tuberculatum*-group is revised all material is listed under *nepalicum*. Closely related but distinctly different are *curiosum* Kaszab 1952 (with quite apomorph sexual characters in males) and *woynarovichi* Kaszab 1973.

Distribution: Southeastern Asia, Taiwan; ? Nepal (Kaszab 1970).

2.23. *Gonocephalum wittmeri* Kaszab 1975 (Figs. 46–47)

Material: Lamjung Distr., Besisahar, 900 m, 17. X. 1983 leg. Smetana & Löbl, 1 ex. BRIO. – Gorkha Distr., Darondi Khola below Barpak to Doreni, 1100–900 m, 12. VIII. 1983 leg. Martens & Schawaller, 7 ex. SMNS. – Dhading Distr., Ankhu Khola valley, Ankhu Sangu to Sellentar, 530–750 m, 26. VII. 1983 leg. Martens & Schawaller, 3 ex. SMNS. – Ilam Distr., 5 km N Sanishare, feet of Siwalik Mts., 270–300 m, 3.–5. IV. 1988 leg. Martens & Schawaller, 2 ex. SMNS.

Distribution: Bhutan (Kaszab 1975 b); Nepal (new record).

2.24. *Gonocephalum woynarovichi* Kaszab 1973 (Figs. 9–10)

Material: Piplei, 27. VI. 1968 leg. Woynarovich, 1 paratype HNHM. – Bheri zone, Nepalganj, 200 m, 17.–20. VI. 1995 leg. Ahrens, 1 ex. SMNS.

Distribution: India; Nepal (Kaszab 1973, 1975 a).

3. List of further Himalayan species

In his monograph and later, Kaszab (1952, 1961, 1975 b, 1978) recorded further species from the Himalayas (apart from their general wider distribution), which might be expected in Nepal too:

aequatoriale (Blanchard 1853)	upper Assam
alaticolle (Fairmaire 1893)	Sikkim
annamita Chatanay 1917	northeastern Assam
catenulatum (Fairmaire 1896)	Sikkim
dorsogranosum (Fairmaire 1896)	Sikkim
gebianum Kaszab 1952	Darjeeling
granulatipenne Kaszab 1978	Darjeeling, Bhutan
guerryi Chatanay 1917	Darjeeling
hingstoni Kaszab 1952	Sikkim, Assam
kuehnelti Kaszab 1961	Kashmir
oblongum (Fabricius 1801)	Sikkim
parallelum Kaszab 1952	upper Indus
patricium Kaszab 1952	Sikkim
sikkimense Kaszab 1952	Sikkim
sinicum Reichardt 1936	Bhutan
spinicolle (Fairmaire 1896)	Simla
stevensi Kaszab 1952	Assam
stoeckleini Kaszab 1952	upper Assam
vagum (Steven 1829)	Sikkim.

Fig. 48. Aggregation of *Gonocephalum roseni* with an Elaterid beetle under a stone in Kali Gandaki valley near Dana. Both species possess a similar conglomeration of soil detritus among the short cuticular setation.

4. Biology and syntopic occurrence

In Nepal, all *Gonocephalum* species are characteristic elements of open land in different altitudes, they are lacking in closed mature forests. They can be found quite often in cultivated land along fields and roads, in bushlands but also in open alpine steppe habitats. They are collected mostly under stones but also under bark of rotten trunks or under old cattle excrements where they aggregate during daytime. *Gonocephalum* species (all?) are usually active during late evening and night, then running and flying around (attracted by light!) and feeding on low plant strata like grasses but also on crops. A few times I observed *Gonocephalum* species in early morning climbing from grasses to their hiding-places for the day or even running around during daytime.

Open habitats in Nepal are mostly dry habitats. *Gonocephalum* adults nearly always possess a rough conglomeration of soil detritus among the short cuticular setation which might be considered as an adaption against evaporation in those habitats.

The colour of these beetles often reflects the soil colour of the corresponding place. Night activity is a further strategy against diurnal high insolation in open land.

The aggregations of adults under stones often consists of different species, I observed up to 3 *Gonocephalum* species under a single stone. Although this is a more or less inactive community it can be supposed that at least species are food competitors in a single habitat at the same time. Sometimes, even beetles from other families, in particular Elateridae, are incorporated in such aggregations (Fig. 48). A few syntopic and synchronical occurrences are listed:

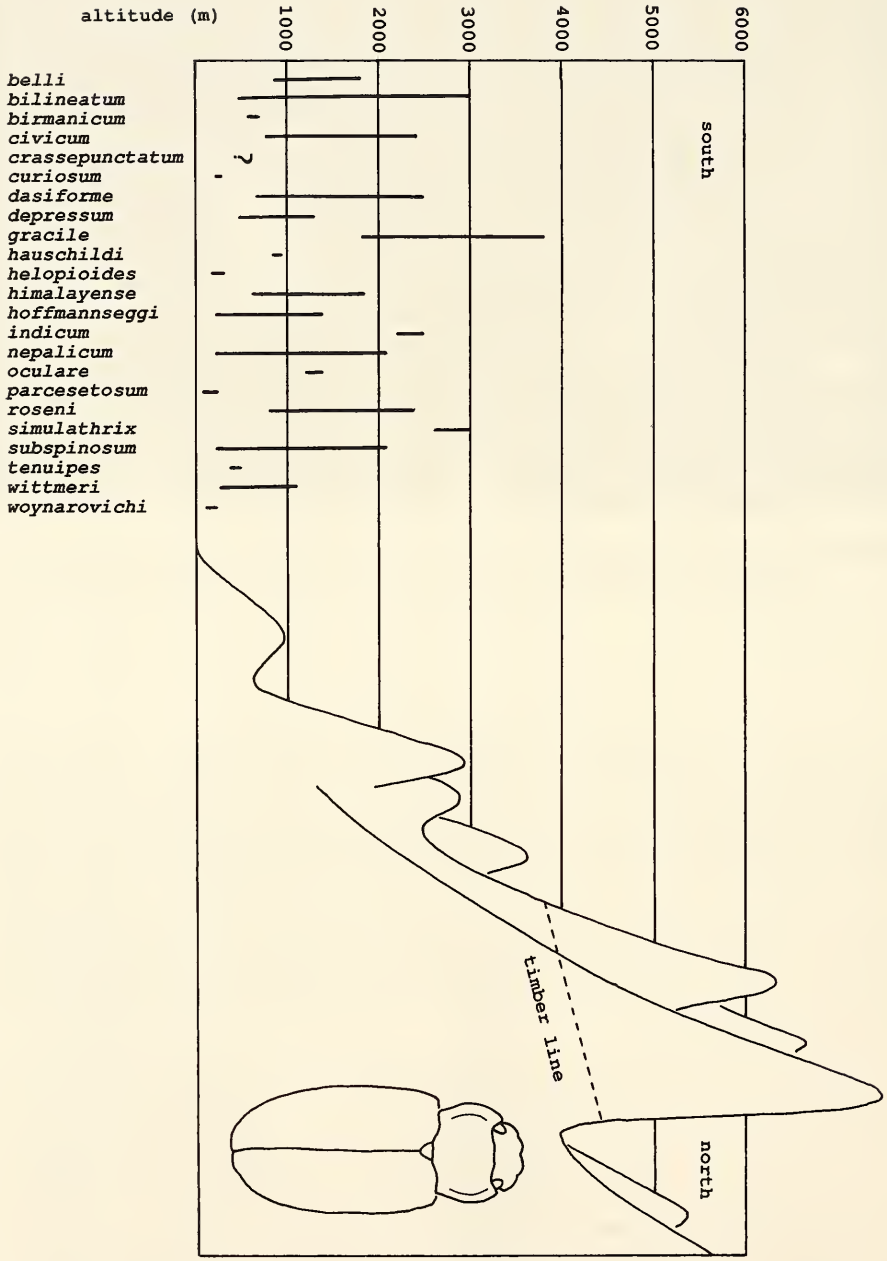


Fig. 49. Vertical distribution of *Gonocephalum* species in the Nepal Himalayas.

- Myagdi Distr., Bim to Darbang, 1150–1000 m, 30. V. 1995 leg. MARTENS & SCHAWALLER: *bilineatum, himalayense, nepalicum.*
- Myagdi Distr., Myagdi Khola valley between Tatopani and Beni, 900–800 m, 31. V. 1995 leg. MARTENS & SCHAWALLER: *depressum, nepalicum, roseni.*
- Myagdi Distr., Myagdi Khola valley, Khibang bridge to Boghara, 1400–1800 m, 20. V. 1995 leg. MARTENS & SCHAWALLER: *belli, himalayense, nepalicum.*
- Mustang Distr., Dana, 1300–1500 m, 4. V. 1995 leg. MARTENS & SCHAWALLER: *bilineatum, roseni.*
- Gorkha Distr., Buri Gandaki valley, Arughat to Suteo, 600–700 m, 27. VII. 1983 leg. MARTENS & SCHAWALLER: *birmanicum, depressum, nepalicum.*
- Kathmandu valley, Bagmati river, 1300 m, 27. IV. 1995 leg. HARTMANN: *belli, civicum, oculare.*
- Ilam Distr., Mai Khola valley, ascent from river bank to Gola Kharka, 470–900 m, 8. IV. 1988 leg. MARTENS & SCHAWALLER: *bilineatum, nepalicum.*

5. Zoogeography and vertical distribution

All Nepalese species possess well developed hind wings, which is the usual case in this genus. However, some unwinged species exist, in particular in endemic insular populations. The Nepalese species in general have wider distributional patterns. One group of species is formed by those zoogeographical elements with a wider distribution in India, Indochina and on the Sundas, partly also on Taiwan, the Philippines and on New Guinea *(bilineatum, depressum, hoffmannseggi, subspinosum)*, the second group consists of species with a smaller area restricted to the Indian subcontinent, partly also in Thailand and Burma *(belli, civicum, curiosum, dasiforme, hauschildi, helopioides, oculare, parcesetosum, tenuipes)*. Further species are more or less restricted to the Himalayas or even Nepal proper *(himalayense, nepalicum, roseni, wittmeri)*. The last and smallest group of species are those occurring only in western Nepal und adjacent Indian und Tibetan territories *(gracile, simulathrix)*.

The last group of species with Palaearctic distributional pattern usually live in higher altitudes, whereas most of the species with Oriental distribution occur in lower altitudes (see vertical distribution of all Nepalese species in Fig. 49). In the Kali Gandaki valley between Dhaulagiri and Annapurna with its fascinating phytogeographical and climate gradient from the humid and Oriental south to the dryer and Palaearctic north, *Gonocephalum gracile* lives only above a line between the villages Tukche and Marpha (altitude about 2600 m). In that dry semidesert area this species is nearly without competition (apart from an other tenebrionid species *Freudeia nepalica*) and thus extremely abundant.

6. References

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