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Two New North American Stenus (Parastenus) Species from the Appalachians (Insecta: Coleoptera, Staphylinidae: Steninae)

*** 254th contribution to the knowledge of Steninae**

Abstract
Description of 2 new species of the genus *Stenus* LATREILLE, subgenus *Parastenus* V. HEYDEN, from the Appalachian Mountains, U.S.A.: *Stenus (Parastenus) clingmanmontis* sp.n. and *S. (P.) sandrae* sp.n.

Zusammenfassung
Beschreibung zweier neuer Arten der Gattung *Stenus* LATREILLE, Untergattung *Parastenus* V. HEYDEN aus den Appalachian Mountains, U.S.A.: *Stenus (Parastenus) clingmanmontis* sp.n. und *S. (P.) sandrae* sp.n.

The staphylinid genus *Stenus* LATREILLE is represented in the nearctic region with 165 species. Only 5 of them belong to the subgenus *Parastenus* V. HEYDEN, 1 species is living in the Western parts of the continent (*S. pterobrachys* GEMMINGER & HAROLD), 2 species are holarctic and widely distributed in the Northern parts of North America *(S. noctivagus* CASEY, *S. sibiricus* J. SAHLBERG), and 3 species are only known from the Appalachian Range in Eastern North America (*S. limatulus* L. BENICK, *S. megalops* CASEY, *S. personatus* L. BENICK).

While revising the nearctic *Stenus*-fauna PUTHZ found out that the Appalachians must have been a center for evolution for small, brachypterous, brownish (*Parastenus*)-species (as also has been reported from other invertebrate groups), of which the 3 taxa quoted above only represent the peak of an hitherto unknown ice-mountain. Most of these small species live in the edaphon of montane woods and are very similar by their exosceletal characters. Since in some localities two ore three species are living sympatrically, dissection of the genitalia of each single individual is a must. So a detailed description of exoscletal characters has to be accompanied with detailed description of male- and female genitalia, as is shown in this article.

In 1994 J. F. CORNELL collected several brachypterous *Stenus* from localities in the Appalachians and sent them, along with some material collected earlier in the same region, to V. PUTHZ, who identified new species beside of additional records for *Stenus (Hypostenus) appalachianus* PUTHZ for Georgia and Tennessee. 2 new (*Parastenus*) species are described below. A comprehensive study of extensive materials from the major U.S. collections is in preparation (PUTHZ).

Abbreviations: aE = average distance between eyes; HT = holotype; lEl = greatest length of elytra; lP = length of pronotum; lS = length of elytral suture; PM = proportional measurements; PT: paratype/s; wEl = greatest width of elytra; wH = width of head; wP = width of pronotum.

Stenus (Parastenus) sandrae spec. nov.
Brachypterous, blackish brown, shining, punctation of head moderately coarse and dense, that of pronotum somewhat coarser, elytral punctation coarse and dense, abdominal punctation fine anteriorly, extremely fine posteriorly; pubescence short and sparse, recumbent; whole bode densely reticulated. Maxillary palpi yellow. Antennae light brown, club brown. Legs yellowish- brown. Clypeus and labrum dark brown, the latter lighter brown anteriorly, moderately densely pubescent.

Length: 2.2-3.1 mm (fore body: 1.2-1.3 mm).

Holotype: ♂: North Carolina, Swain County, Fork Ridge Trail near Clingman's Dome, 28.VI.1994, J.F. & S.J. CORNELL, ex forest litter (U. S. National Museum). Paratypes: 2 ♀♀ same data (coll. CORNELL, coll. PUTHZ); 2 ♀♀: Clingmans Dome, 16.IX.1941, QUIRSFELD (ex coll. FROST) (Museum of Comparative Zoology, Harvard University, Cambridge, Mass.); 3 ♀♀: Swain Co., Balsam Mt. at Heintoga Overlook on Blue Ridge Parkway in Great Smoky Mountains National Park, litter along unpaved forest road, 29.IV.1994, J.F. & S.J. CORNELL (coll. CORNELL, coll. PUTHZ); 1 ♂, 1 ♀: Smoky Mts., N.C.-Tenn., Newfound Gap 5000-5200 feet, 31.VIII.1930, DARLINGTON (MCZH, coll. PUTHZ).

PM of HT: wH: 76; aE: 37; wP: 62; lP: 55; wEl: 72; lEl: 55; lS: 41.

Head large, slightly broader than elytra, front moderately broad with two distinct longitudinal furrows, median portion at least as broad as each side portion, distinctly elevated, about equal in height to highest curvature of eyes; punctation moderately dense, moderately coarse, diameter of punctures as large as largest cross-section of third antennal segment or slightly larger, interstices often as large as diameters of punctures, larger on elevated median portion.

Antennae slender, when reflexed reaching to posterior fourth of pronotum, penultimate segment almost globular, slightly longer than broad.

Pronotum slightly broder than long, broadly rounded trapezoidal shape, from widest point posterior portion about twice as long as anterior; a slight two-three punctures-wide median impressed area; punctation distinctly coarser than on head, about equally dense throughout, except on median impression where interstices are much wider.

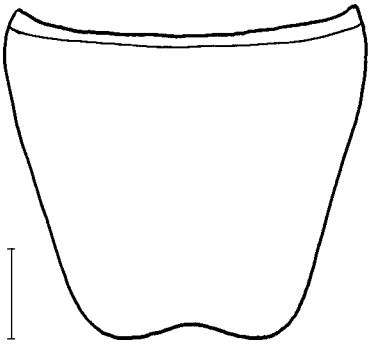
Elytra slightly narrower than head, distinctly broader than long, shoulders oblique, sides distinctly, roundly divergent, not constricted in posterior third, posterior margin obtuse-angled, strongly emarginate; punctation coarse and dense, somewhat coarser than on pronotum, largest punctures as large as apical cross- section of second antennal segment, interstices mostly smaller than diameters of punctures.

Abdomen very broad with moderately broad, finely and sparsely punctate paratergites, which are slightly directed downwards, those of segment 4 as broad as second antennal segment; basal impressions of first tergites shallow, tergite 7 without apical palisade fringe; punctation moderately fine and moderately dense anteriorly, extremely fine and sparse posteriorly.

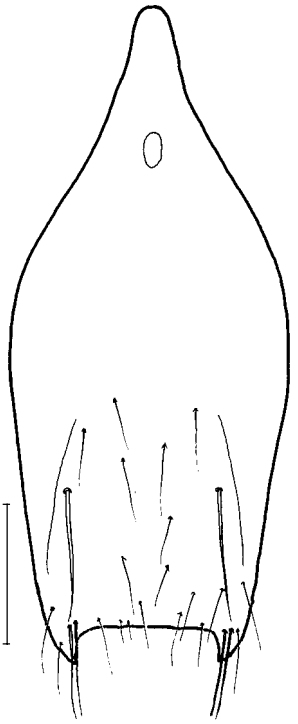
Legs robust, metatarsi about 2/3 length of metatibiae, first segment about as long as the three following combined, much longer than fifth; fourth segment almost simple (!).

Head and pronotum with dense, deep and about isodiametrical reticulation, reticulation on elytra about same but less deep, abdominal reticulation moderately deep, meshes somewhat larger than those on pronotum, sometimes slightly transverse.

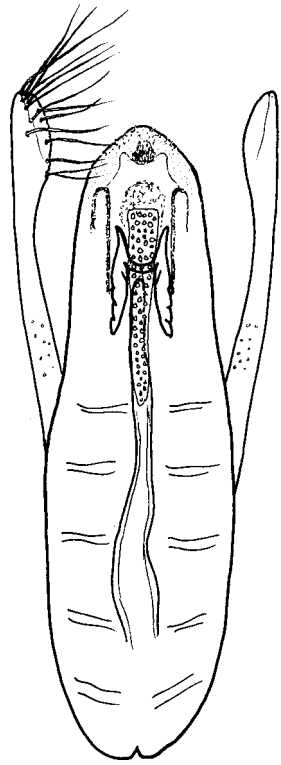
Fig. 1-6: *Stenus (Parastenus) sandrae* sp.n.: Sternite 8 (1) and sternite 9 (2) of male (HT), ventral aspect of aedeagus (3, HT), spermatheca (4: PT Fork Ridge Trail; 6: Balsam Mt.), valvifer (5, PT: Balsam Mt.). Scale = 0.1 mm (2 = 3-6).



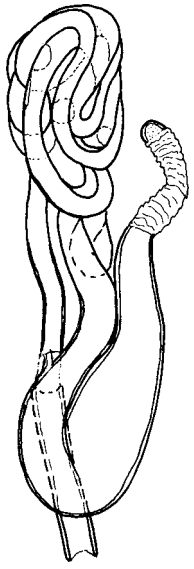
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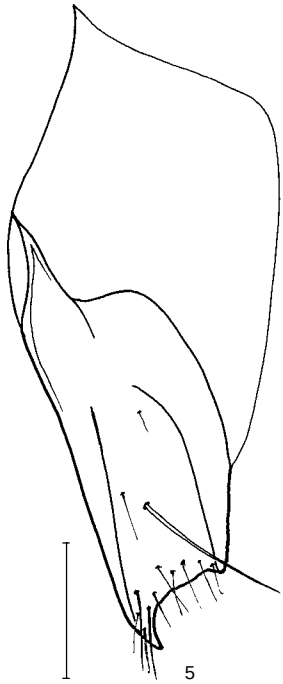
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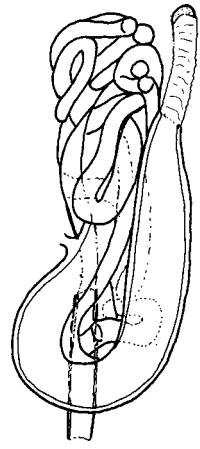
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Male: Sternite 8 (fig. 1), sternite 9 (fig. 2), tergite 10 rounded, aedeagus (fig. 3), apical portion of median lobe short, broadly rounded with numerous minute setae ventrally.

Female: Sternite 8 slightly, roundly produced, valvifers acute apicolaterally, tergite 10 rounded, spermatheca (fig. 4, 5), proximal end of tube different in length.

Stenus sandrae sp.n. is distinguished from *S. limatulus* L. BENICK by considerably finer abdominal punctation, less convex abdomen with paratergites distinctly directed downwards, by slightly smaller size and shallower, somewhat extended punctures on elytra, from *S. personatus* L. BENICK by the punctation of the fore body, which is more distinctly indented (especially that on elytra), by the narrower head and slightly smaller size, from both by the sexual characters. From *S. clingmanmontis* sp.n. it is distinguished by the smaller size, broader head, deeper punctation of the fore body and by the different abdominal reticulation, from all by the sexual characters.

Etymology: This species is named in honour of my wife, SANDRA CORNELL, who assisted in the capture of this and many other species during our 30 years together.

Stenus (Parastenus) clingmanmontis spec. nov.

Brachypterous, blackish brown, head slightly shining, reflection of pronotum more distinct, rest of surface nearly brilliant. Punctation of head fine and sparse, pronotum coarsely and moderately densely punctate, elytral punctation coarse, shallow, moderately dense, abdomen very finely and sparsely punctate; pubescence distinct, short, recumbent; whole bode distinctly reticulated. Maxillary palpi yellow, antennae light brown, club infuscate, legs reddish-yellow, apical portion of femora narrowly darker. Clypeus blackish, labrum dark brown with anterior margin lighter, moderately densely pubescent.

Length: 2.8-3.8 mm (fore body: 1.6-1.7 mm).

Holotype ♂: North Carolina, Swain Co., Clingman's Dome, ex forest litter, 20.IV.1974, R. WELK (U.S. National Museum); PT: 8 ♀♀ same data as HT (USNM, coll. CORNELL, coll. PUTHZ, Muséum d'histoire naturelle, Genf); 1 ♂: Great Smoky Mountains National Park, Clingman's Dome, Trail to Andrew's Bald, 6000 feet, 24.V.1968, T.L. & L.J. ERWIN (USNM).

PM of HT: wH: 31; aE: 15; wP: 25; lP: 22; wEl: 23; lEl: 23; lS: 17.

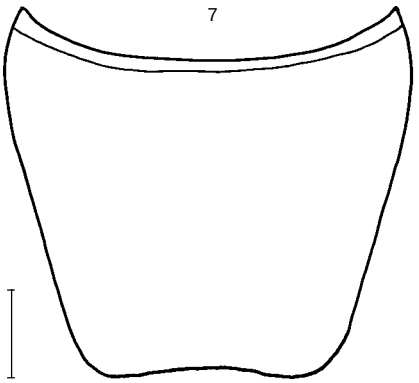
Head large, mostly broader than elytra, front moderately narrow with two deep and sharp longitudinal furrows, median portion distinctly but slightly broader than each of the side portions, broadly elevated to about the level of medial eye margins; punctation not very distinct because of dense reticulation, individual punctures about as large as basal cross section of third antennal segment, interstices distinctly larger than diameters of punctures, may become twice as large as.

Antennae slender, short, when reflexed reaching almost to posterior quarter of pronotum, penultimate segment larger than ante-penultimate, slightly longer than broad.

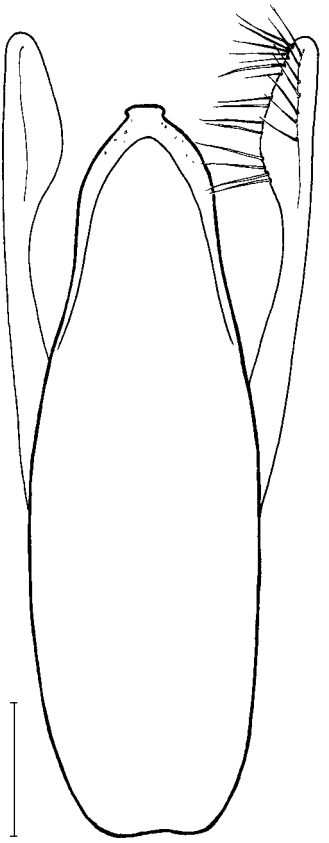
Pronotum broader than long, sides strongly rounded, broadest in anterior half, strongly constricted in posterior half; no medial impression; punctation considerably more distinct than on head and coarser, more regular and moderately dense to dense (see below), diameters of punctures (mostly) somewhat larger than widest coarse section of third antennal segment, interstices half as large as diameters of punctures, may become as large as (see below).

Elytra in most cases slightly narrower than head, trapeziform, much broader than long, shoulders oblique, sides distinctly, evenly divergent, very slightly constricted in posterior quarter, posterior margin obtuse-angled, strongly emarginate; sutural impression broad and shallow; punctation coarse and shallow (indentation of punctures becoming shallower posteriorly), moderately dense, size of

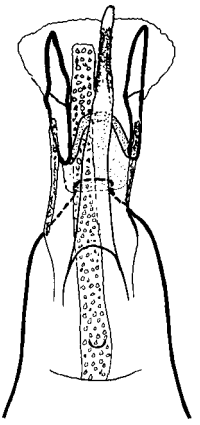
Fig. 7-12: *Stenus (Parastenus) clingmanmontis* sp.n.: Sternite 8 (7) and sternite 9 (10) of male (HT), ventral aspect of aedeagus without internal structures (8) and apical portion of median lobe with expulsed internal structures (9:HT), spermatheca and valvifer (11, 12, PT: Clingman's Dome). Scale = 0.1 mm (8 = 9-12).



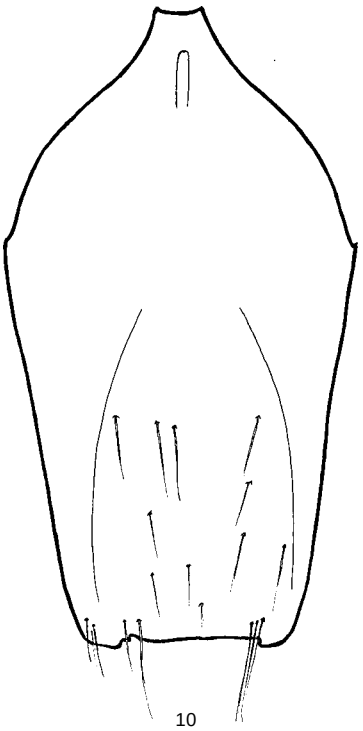
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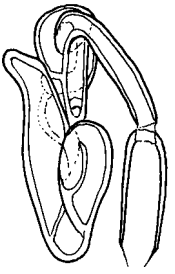
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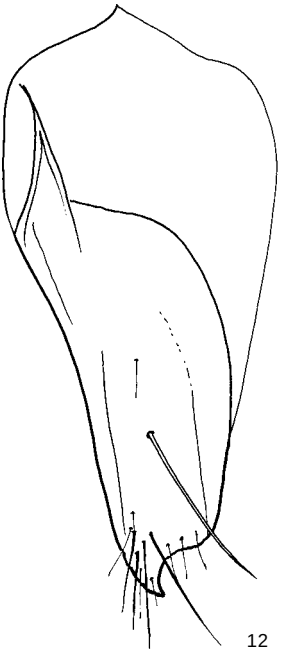
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punctures about as large as in pronotal punctures but can also become distinctly larger (see below), interstices as large as diameters of punctures or slightly less large.

Abdomen very broad with moderately broad, finely and sparsely punctate paratergites, which are situated in about sagittal level, those of segment 4 as broad as metatibiae at base (broader than antennal segment 2); basal impressions of first tergites shallow; tergite 7 without apical palisade fringe; punctation fine and very sparse anteriorly, becoming yet finer and sparser posteriorly, punctures of tergite 7 much smaller than facets at medial eye margin, interstices three times and more as large as punctures.

Legs moderately robust, metatarsi 3/4 as long as metatibiae, first segment less long than the three following segments combined, distinctly longer than the last segment, segment 4 shortly, indistinctly bilobed.

Reticulation of the whole surface dense, isodiametrical.

Variability: Coarseness and denseness of the punctation of pronotum and elytra vary considerably, as mentioned above.

Stenus clingmanmontis sp.n. is remarkable by the differently shaped apicolateral angle of sternum 9 (blunt in male, acute in female) and by the spermatheca which considerably differs from those of related species (which have mostly the type figured in figs. 4, 5). It may be distinguished from *S. limatulus* L. BENICK by the much shallower punctation of the fore body, very deep and sharp longitudinal furrows of the front, by the much finer punctation of the abdomen, and by the larger size, from *S. personatus* L. BENICK by the much broader elytra, deeper longitudinal furrows of the front, and the larger size, from *S. sandrae* sp.n. by the broader paratergites, deep and sharp longitudinal furrows and finer punctation of the front, and by lacking a medial pression on the pronotum, from all these species furthermore by the very broad (flat) abdomen and by the genitalia.

Bibliography

BENICK, L. (1928): Amerikanische Steninen (Col., Staph.). – Wien. ent. Ztg. **45**: 33-52

HOLT, P.C. (ed.) (1969): The Distributional History of the Biota of the Southern Appalachians Part I: Invertebrates. – Virginia Polytechnic Institute Res. Div. Monogr. **1**: VIII+295 pp

PUTHZ, V. (1988): Revision der nearktischen Steninenfauna 3 (Coleoptera, Staphylinidae) Neue Arten und Unterarten aus Nordamerika 210. Beitrag zur Kenntnis der Steninen. – Ent. Bl. Biol. Syst. Käfer **84**: 132-164

PUTHZ, V. (1993): Zur Synonymie und Stellung einiger Steninen VI (Coleoptera, Staphylinidae) 226. Beitrag zur Kenntnis der Steninen. – Ent. Bl. Biol. Syst. Käfer **89**: 139-153.

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