

**Four new species of *Strouhalium* from
Sichuan and Himalaya (Coleoptera: Staphylinidae: Quediina)**

**Čtyři nové druhy drabčků z rodu *Strouhalium* ze Sečuánu a Himaláji
(Coleoptera: Staphylinidae: Quediina)**

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Taxonomy, Coleoptera, Staphylinidae, Quediina, *Strouhalium*, China, Himalaya

Abstract. Four new species of the genus *Strouhalium* Scheerpeltz, 1962, one from the Himalaya and three from China (Sichuan) are described and illustrated. A key for identification of all known species of the genus is given. The relationship of *Strouhalium* to *Heinzia* Korge, 1971 (Anatolia) is briefly discussed.

INTRODUCTION

Recently, I was able to study several interesting specimens belonging to the subtribe Quediina that were recently collected in the mountains of Sichuan, China, and in the Himalaya. They proved to belong to the genus *Strouhalium* Scheerpeltz, 1962, a previously monotypic genus, with the species *S. gracilicorne* Scheerpeltz, 1962 described from one male specimen, presumably from Tibet, but later rediscovered in Nepal and in Pakistan (Smetana 1993: 85-90). The four studied specimens belong to four different new species, a fact that allows speculation that the genus *Strouhalium* is possibly represented by numerous species in the Himalaya and in the mountains of western China. It is suspected that the species of this genus live in similar specialized habitats, as described for *Beeria* by Smetana, 1977 (also see below). Consequently, they apparently appear on the surface only occasionally, or only during the night, and are therefore only rarely collected.

The genus *Strouhalium* belongs to the primitive lineage of Quediina, containing two additional, monotypic genera: *Beeria* Hatch, 1957 (Pacific Coast of North America) and *Heinzia* (Anatolia). While there is little doubt about the generic distinctness of *Beeria*, the genera *Strouhalium* and *Heinzia* seem to be closely related and similar to each other and there is a possibility that they actually represent a single taxon. More material is needed before this question can be answered. At present, the only species of *Heinzia* differs from those of *Strouhalium*, in addition to some differences on the male and female genital segments, and on the aedeagus, by the glabrous maxillary palpi (with segments 2 and 3 bearing only the usual isolated setae on the apical portion). In members of *Strouhalium*, segment 2 has increased number of setae apically and segment 3 is entirely setose.

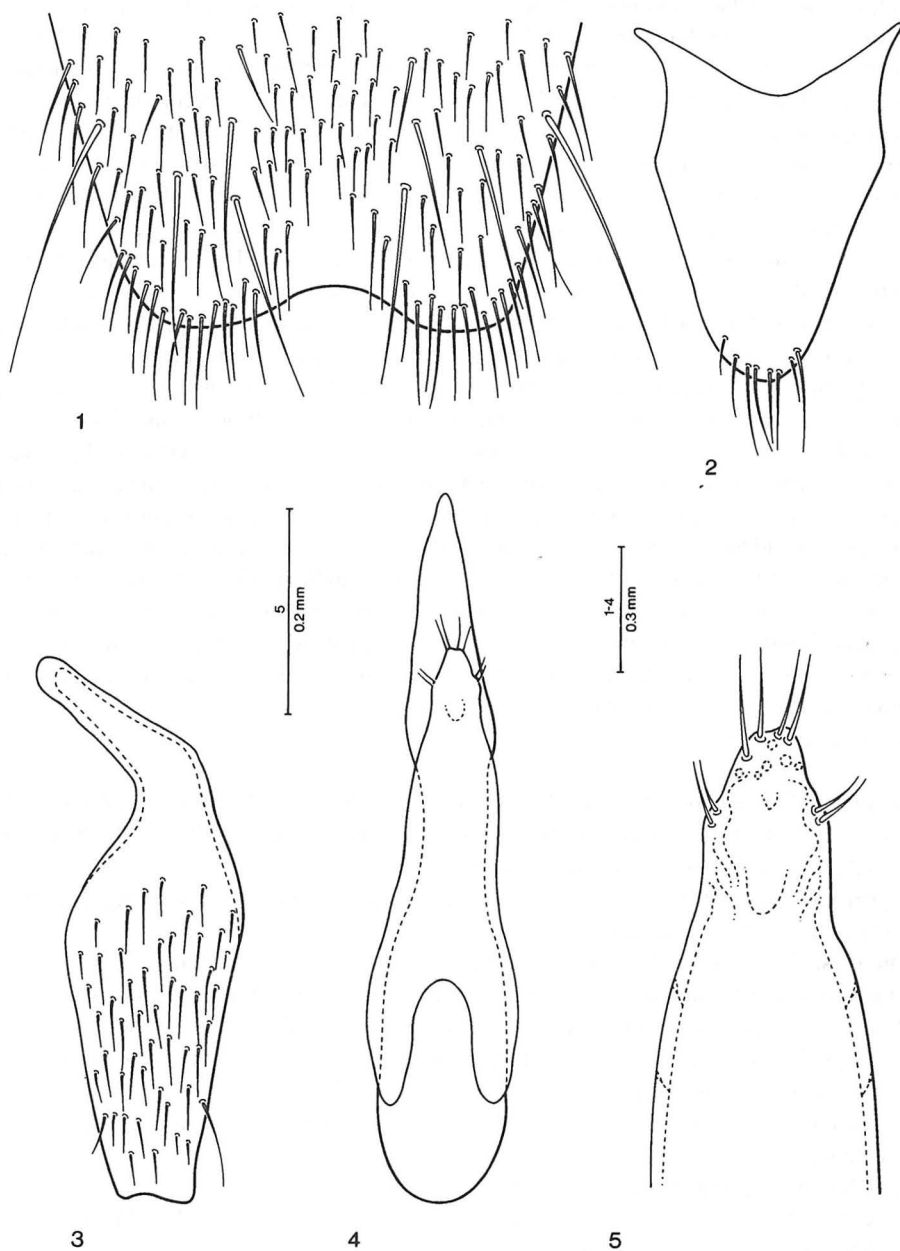
In the following, I describe and illustrate the four new species of *Strouhalium* and present a key for identification of the five species of the genus known at present.

I wish to thank my colleagues B. Březina, D. Král and J. Farkač from Praha, Czech Republic, and Mr. H. Schillhammer, Naturhistorisches Museum in Wien, Austria, for submitting this material for study and for allowing me to keep part of it in my collection. The original draft of the manuscript was reviewed by my colleagues E. C. Becker and A. Davies. Their comments eventually led to its improvement.

TAXONOMIC PART

Strouhalium brezinai sp. n. (Figs 1-5)

Description. Dark brownish-piceous with black head; lateral margins of pronotum, elytral suture, apical margins of abdominal tergites and apex of abdomen paler; maxillary and labial palpi brown, with last segments of each becoming paler toward apex; antennae piceous, becoming slightly paler toward base, with bases of segments 4-10 inconspicuously paler; legs brownish with slightly paler tarsi, medial faces of front and middle tibiae, most of hind tibiae and about basal two thirds of hind femora distinctly darkened, piceous to piceous-black. Head of rounded quadrangular shape, about as long as wide, moderately narrowed behind eyes, posterior angles obsolete, indistinct; eyes relatively large, markedly convex and protruding from lateral contours of head; tempora distinctly longer than eyes seen from above (ratio 1.36); anterior frontal puncture at antero-medial margin of eye, posterior frontal puncture situated distinctly closer to posterior-medial margin of eye than to posterior margin of head, one additional puncture between it and posterior margin of head, temporal puncture situated distinctly closer to posterior margin of eye than to posterior margin of head; posterior half of head, including tempora, with moderately fine and dense punctation gradually becoming sparser mediad and anteriad, with clypeus almost devoid of punctures; surface of head with very fine and dense, meshed microsculpture gradually becoming denser anteriad, particularly on clypeus. Antenna very long and slender, feebly thickened anteriad, reaching well beyond elytral humerus when reclined, segment 1 thicker than segments 2 and 3 and about as long as segment 3, segment 2 distinctly shorter than segment 3 (ratio 0.63), segments 4-10 distinctly longer than wide, gradually becoming slightly shorter toward apex of antenna, length : width ratio of penultimate segment 1.60, last segment shorter than two preceding segments combined, extensively, obliquely truncate apically. Pronotum as long as width at widest point at about anterior third, moderately transversely convex anteriorly but becoming flatter toward posterior margin, from widest point markedly narrowed anteriad and less markedly but slightly concavely narrowed posteriad toward moderately rounded base; lateral portions in posterior half slightly, narrowly explanate; dorsal rows each with three fine punctures, rows indistinct due to extensive, fine punctation with punctures not quite evenly spaced; microsculpture similar to that on head, with meshes becoming narrower and more or less transverse toward posterior margin of pronotum. Scutellum large, sparsely, finely punctate and pubescent, surface with extremely fine, irregular meshed microsculpture. Elytra rather long, at base vaguely narrower than pronotum at widest point, slightly widened posteriad, at suture slightly (ratio 1.12), at sides distinctly (ratio 1.27) longer than pronotum at midline; punctation very fine and dense, transverse



Figs 1-5. *Strouhalium brezinai* sp.n.: 1 - apical portion of male sternite 8. 2 - tergite 10 of male genital segment. 3 - sternite 9 of male genital segment. 4 - aedeagus (ventral view). 5 - underside of apical portion of paramere with setae.
 Obr. 1-5. *Strouhalium brezinai* sp.n.: 1 - apikální část 8. abdominálního sternitu samce. 2 - 10. abdominální tergit samce. 3 - 9. abdominální sternit samce. 4 - aeodeagus, pohled z ventrální strany. 5 - apikální část paraniery, pohled z ventrální strany.

distance between punctures mostly about one and a half diameter of punctures; pubescence fine, piceous; surface rather dull due to very fine and dense, subgranulose microsculpture. Wings fully developed. Abdomen with tergite 7 with whitish apical seam of palisade fringe; punctation of abdominal tergites very fine, dense, rather evenly spaced but gradually becoming slightly sparser toward apex of abdomen; pubescence fine, piceous; surface between punctures with exceedingly dense and fine microsculpture of transverse striae. Legs very long, slender; last segments of middle and hind tarsi with very long claws, those of hind tarsus each slightly longer than half length of last tarsal segment (ratio 0.60).

Male. First four segments of front tarsus markedly dilated, sub-bilobed, each densely covered with pale modified setae ventrally; segment two vaguely wider than apex of tibia (ratio 1.18); segment four narrower than preceding three segments. Sternite 8 with five long, strong setae on each side; with rather shallow, almost arcuate medio-apical emargination, small and narrow area before emargination vaguely flattened and smooth (Fig. 1). Genital segment with tergite 10 wide, markedly narrowed toward subarcuate apex with numerous, unequally long, apical setae (Fig. 2). Sternite 9 narrow, elongate; basal portion long and narrow, strongly curved; apical portion moderately densely setose, without any prominent, long setae, with apex asymmetrically subemarginate (Fig. 3). Aedoeagus (Figs 4, 5) narrow and elongate; median lobe slightly asymmetrically constricted in middle portion, anteriorly narrowed into long, subacute apical portion, with a tooth on face adjacent to paramere; paramere wide, covering middle portion of median lobe, considerably shorter than median lobe, anteriorly concavely narrowed into differentiated pseudo-pentagonal apical portion lacking any sensory peg setae on underside, but bearing four setae at apex and two similar setae on each lateral margin at base of differentiated apical portion; internal sac without any larger sclerotized structures.

Female unknown.

Length 9.0 mm.

Type material. Holotype (male): CHINA: "China, C-Sichuan (KANGDING) GONGGA SHAN massive, + 2900 m ca. 25 km NNW of MOXI village 29°49'N / 102°03' E 30.V.1993 B. Brezina". In the collection A. Smetana, Ottawa, Canada.

Geographical distribution. *Strouhalium brezinai* sp. n. is at present known only from the type locality in the Gongga Shan range in Sichuan.

Bionomics. Nothing is known about the collection circumstances of the holotype.

Comparisons and comments. *Strouhalium brezinai* sp. n. differs from *S. gracilicorne* sp. n., in addition to the differences on the male genital segment and on the aedoeagus (see Figs 1-5 herein and Figs. 1-12 in Smetana, 1993), mainly by the absence of the additional setiferous punctures between the anterior frontal punctures, by the markedly wider head and by the distinctly shorter antennae and legs, etc. It differs from *S. sichuanense* sp. n. by the differences given in the key and in the description of the latter species.

The holotype appears to be slightly teneral.

Etymology. Patronymic: the species is named in honour of Mr. Boleslav Brezina, Praha, Czech Republic, who collected the holotype.

Strouhalium sichuanense sp. n. (Figs 6-10)

Description. In all characters very similar to *S. brezinai* sp. n., but different as follows: size slightly smaller, form somewhat slenderer. Piceous-black with vaguely paler pronotum and apex of abdomen; darkening of middle tibiae and of hind tibiae and femora more extensive. Head smaller, of more rounded shape, more rounded and less narrowed posteriad behind eyes; eyes similar, but tempora only 1.10 as long as eyes seen from above. Antenna relatively shorter, with outer segments somewhat shorter, penultimate segment with length:width ratio 1.50. Pronotum shorter, vaguely shorter than width at widest point at about middle (ratio 0.94), from widest point about equally narrowed both anteriad and posteriad, but vaguely concavely so posteriad; general punctation of pronotum slightly denser. Elytra appearing slightly shorter, at suture vaguely (ratio 1.07), at sides somewhat (ratio 1.14) longer than pronotum at midline; punctation slightly finer and sparser; microsculpture finer, so that surface between punctures appearing shinier. Punctation of abdominal tergites vaguely finer and denser.

Male. First four segments of front tarsus similar, but somewhat less dilated; segment two about as wide as apex of tibia. Sternite 8 with a very wide and shallow, subangulate emargination (Fig. 6). Genital segment with tergite 10 not particularly different from that of *S. brezinai* sp. n. except somewhat smaller (Fig. 7). Sternite 9 smaller with shorter basal portion and with fairly deep, asymmetrical apical emargination (Fig. 8). Aedoeagus (Figs 9, 10) similar to that of *S. brezinai* sp. n., but smaller; median lobe narrower, more asymmetrically constricted in middle portion, apical portion with lateral margins slightly concave just in front of paramere; paramere narrower, distinctly asymmetrical, differentiated apical portion of triangular shape. Legs slightly shorter.

Female unknown.

Length 7.9 mm.

Type material. Holotype (male): CHINA: "CHINA. Sichuan Kanding VII. 1992". In the collection of the Naturhistorisches Museum, Wien, Austria.

Geographical distribution. *Strouhalium sichuanense* sp. n. is at present known only from the type locality in western Sichuan.

Bionomics. Nothing is known about the collection circumstances of the holotype.

Comments. *Strouhalium sichuanense* sp. n. may only be confused with *S. brezinai* sp. n., but the differences described above should allow positive distinguishing of these two species.

It should perhaps be noted that the locality „Kanding“ is the present name of Reitter's „classical“ locality „Tatsienlu“, from which many species of Staphylinidae were described by Bernhauer in the late thirties.

Etymology. The specific name is derived from the name of the Chinese province of Sichuan, where the species occurs.

Strouhalium farkaci sp. n. (Fig. 11)

Description. Piceous-black with black head, lateral margins of pronotum, lateral portions of abdominal tergites and apex of abdomen vaguely paler; maxillary and labial palpi rufotestaceous; antennae rufo-brunneous, becoming rufous toward base; legs brownish with slightly paler tarsi, medial faces of middle and hind tibiae darkened. Head of rounded shape, about as long as wide, evenly, arcuately narrowed behind eyes, with entirely rounded, obsolete posterior angles; eyes

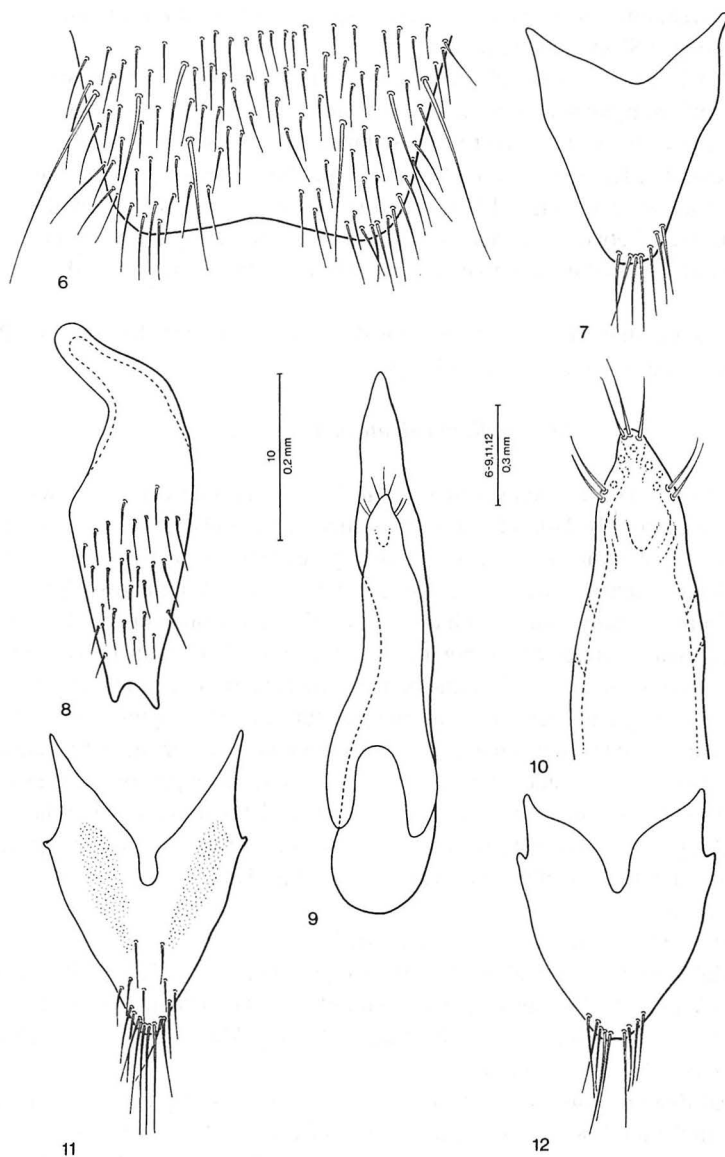
small, convex and slightly protruding from lateral contours of head; tempora much longer than eyes seen from above (ratio 1.61); anterior frontal puncture at antero-medial margin of eye, posterior frontal puncture situated distinctly closer to posterior margin of eye than to posterior margin of head, no puncture between it and posterior margin of head, temporal puncture situated distinctly closer to posterior margin of eye than to posterior margin of head; posterior half of head, including tempora, with rather fine and moderately sparse punctation gradually becoming even sparser mediad and anteriad, with clypeus devoid of punctures; surface of head with very fine and dense microsculpture of mostly transverse meshes gradually becoming even denser anteriad, particularly on clypeus. Antenna long and slender, feebly thickened anteriad, reaching beyond elytral humerus when reclined; segment 1 thicker than segments 2 and 3 and about as long as segment 3, segment 2 distinctly shorter than segment 3 (ratio 0.60), segments 4-10 distinctly longer than wide, gradually becoming slightly shorter toward apex of antenna, length : width ratio of penultimate segment 1.28, last segment shorter than two preceding segments combined, extensively, obliquely truncate apically. Pronotum vaguely shorter than width at widest point at about middle (ratio 0.95), moderately transversely convex anteriorly but becoming flatter toward posterior margin, from widest point equally, in almost even arc, narrowed both anteriad and posteriad, with vaguely rounded base; lateral portions in posterior half only inconspicuously, narrowly explanate; dorsal rows each irregular and composed of five fine punctures, one additional, fine puncture laterad of fourth puncture of dorsal row on each side; sublateral rows each with two punctures situated close to anterior margin; no extensive punctation of pronotum; microsculpture even finer and denser than that on head, with meshes becoming narrow and elongate toward all pronotal margins. Scutellum large, with a few fine punctures bearing fine setae, surface with extremely fine, submeshed microsculpture. Elytra moderately long, at base vaguely narrower than pronotum at widest point, slightly widened posteriad, at suture vaguely shorter (ratio 0.95), at sides vaguely longer (ratio 1.05) than pronotum at midline; punctation very fine, moderately dense, transverse distance between punctures mostly two and half diameters of punctures; pubescence fine, piceous; surface slightly dull due to extremely fine and dense, subgranulose microsculpture. Wings fully developed. Abdomen with tergite 7 with whitish apical seam of palisade fringe; punctation of abdominal tergites very fine, moderately dense, rather evenly spaced but gradually becoming slightly sparser toward apex of abdomen; pubescence fine, piceous; surface between punctures with exceedingly dense and fine microsculpture of transverse striae. Legs fairly long and slender; last segments of middle and hind tarsi with moderately long claws, those of hind tarsus each slightly shorter than half length of last tarsal segment (ratio 0.47).

Female. First four segments of front tarsus markedly dilated, sub-bilobed, each covered with modified pale setae ventrally; segment two vaguely narrower than apex of tibia (ratio 0.85); segment four narrower than preceding segments. Genital segment with tergite 10 triangular, deeply emarginate at base, with two longitudinal, oblique, pigmented areas, and with numerous unequally long setae at apical margin and a few additional setae on apical portion (Fig. 11).

Male unknown.

Length 9.1 mm (abdomen slightly extended).

Type material. Holotype (female): CHINA: "W SICHUAN 2., 6.VII.1994 29.36 N 102.06 E 1900-2900 m Gonggashan-HAILUOGUO lgt. D. Král & J. Farkač". In the collection A. Smetana, Ottawa, Canada.



Figs 6-12. Figs 6-10. *Strouhalium sichuanense* sp. n.: 6 - apical portion of male sternite 8. 7 - tergite 10 of male genital segment. 8 - sternite 9 of male genital segment. 9 - aedeagus (ventral view). 10 - underside of apical portion of paramere with setae. Fig. 11. *Strouhalium farkaci* sp. n.: tergite 10 of female genital segment. Fig. 12. *Strouhalium calculosum* sp. n.: tergite 10 of female genital segment

Obr. 6-12. Obr. 6-10. *Strouhalium sichuanense* sp. n.: 6 - apikální část 8. abdominálního sternitu samce. 7 - 10. abdominální tergit samce. 8 - 9. abdominální sternit samce. 9 - aedeagus, pohled z ventrální strany. 10 - apikální část paramery se setami, pohled z ventrální strany. Obr. 11. *Strouhalium farkaci* sp. n.: 10. abdominální tergit samice. Obr. 12. *Strouhalium calculosum* sp. n.: 10. abdominální tergit samice

Geographical distribution. *Strouhalium farkaci* sp. n. is at present known only from the type locality in the Gongga Shan range in western Sichuan.

Bionomics. No details are known about the collection circumstances of this specimen.

Recognition and comparison. *Strouhalium farkaci* sp. n. may be easily distinguished from the two other species of the genus occurring in Sichuan, by the absence of the extensive punctation of the pronotum. It differs from *S. gracilicorne*, in addition to the differently shaped tergite 10 of the female genital segment (Fig. 11 herein and fig. 15 in Smetana 1993), by the absence of the additional punctures between anterior frontal punctures, by having five punctures in each of the dorsal rows of the pronotum (only four in *S. gracilicorne*), by the markedly shorter antennae and legs, etc.

Etymology. Patronymic: the species is named in honour of Dr. Jan Farkač, Praha, Czech Republic, one of the collectors of the holotype.

Strouhalium calculosum sp. n. (Fig. 12)

Description. In all characters similar to *S. farkaci* sp. n., but different as follows: coloration paler, more or less uniformly dark rufo-brunneous, mouthparts and appendages testaceo-brunneous. Head rather of rounded quadrangular shape, not appreciably narrowed behind eyes; eyes larger, tempora moderately longer than eyes seen from above (ratio 1.33); microsculpture of dorsal surface similar, but noticeably coarser with meshes mostly almost isodiametric. Pronotum narrower, vaguely longer than width at widest point at about anterior third (ratio 1.03), from widest point markedly narrowed in almost straight line both antieriad and posteriad; lateral portions not explanate; dorsal rows irregular, each with four fine punctures; microsculpture similar to that on head but slightly coarser. Elytra somewhat narrower and relatively longer, almost parallel-sided, at suture vaguely (ratio 1.07), at sides slightly longer (ratio 1.15) than pronotum at midline.

Female. First four segments of front tarsus not appreciably different from those of *S. farkaci* sp. n. Genital segment with tergite 10 shorter, less markedly narrowed toward apex, without pigmented areas and with distinctly fewer setae at apex (Fig. 12).

Male unknown.

Length 10.0 mm (abdomen somewhat extended).

Type material. Holotype (female): INDIA: "Burphu, Gori V., 11500 ft. India. H.G.C." "Not known to Cameron" "Probably among shingle" "H.G. Champion Coll. B.M. 1953-156." "Heinzia". In the collection of the Natural History Museum [formerly British Museum (Natural History)], London, England.

Geographical distribution. *Strouhalium calculosum* sp. n. is at present known only from the type locality in the north Kumaon area in the state of Uttar Pradesh of India.

Bionomics. The holotype was apparently found "among shingle", which would suggest a riparian habitat.

Recognition and Comments. *Strouhalium calculosum* sp. n. may be easily distinguished from *S. farkaci* sp. n. by the characters given above. It differs from *S. gracilicorne*, the only other species of the genus known to occur in the Himalaya, mainly by the absence of the additional punctures between the anterior frontal punctures, by the shorter and wider head, by the markedly shorter antennae and legs, by the relatively coarse meshed microsculpture on the pronotum (in *S. graci-*

licorne the surface of the pronotum is almost devoid of microsculpture), and by the distinctly different tergite 10 of the female genital segment (Fig. 12 herein, and fig. 15 in Smetana 1993).

The pronotum of the holotype bears two depressions that are apparently of terratological nature. One is in the middle just before the basal margin and the other one very near the lateral margin in about posterior third.

Etymology. The specific name is the Latin adjective *calculosus*, *-a*, *-um* (full of small stones). It refers to the possible habitat of this species.

Key to species of *Strouhalium*

1. Pronotum with only scattered setiferous punctures, lacking general, extensive punctation 2
- Pronotum, in addition to scattered setiferous punctures, with general, extensive punctation 4
2. Two additional punctures between anterior frontal punctures. Dorsal rows of pronotum each with four punctures. Antennae and legs conspicuously long. Tergite 10 of female genital segment concavely narrowed toward slightly emarginate apex (fig. 15 in Smetana 1993). Length 9.5 - 12.5 mm. Himalaya (Pakistan, Nepal) *S. gracilicorne* Scheerpeltz
- No additional punctures between anterior frontal punctures. Dorsal rows of pronotum each with five punctures. Antennae and legs moderately long. Tergite 10 of female genital segment triangular, not emarginate at apex (Figs 11, 12) 3
3. Head of rounded shape, arcuately narrowed behind eyes; eyes small, tempora much longer than eyes seen from above (ratio 1.61). Surface of pronotum with very fine and dense microsculpture of mostly transverse meshes. Tergite 10 of female genital segment markedly narrowed toward apex, with two longitudinal, oblique pigmented areas, and with numerous setae at and near apical margin (Fig. 11). Length 9.1 mm. Sichuan *S. farkaci* sp. n.
- Head of rounded quadrangular shape, not appreciably narrowed behind eyes; eyes larger, tempora moderately longer than eyes seen from above. Surface of pronotum with rather coarse microsculpture of almost isodiametric meshes. Tergite 10 of female genital segment less markedly narrowed toward apex, without pigmented areas and with distinctly fewer setae (Fig. 12). Length 10.0 mm. Himalaya: North Kumaon. *S. calculosum* sp. n.
4. Tempora distinctly longer than eyes seen from above (ratio 1.36). Pronotum moderately long, as long as width at widest point at about anterior third, from there markedly narrowed anteriorly and less markedly but slightly concavely narrowed posteriorly. Aedeagus larger, median lobe slightly asymmetrically constricted in middle portion, differentiated apical portion of paramere of pseudopentagonal shape (Figs 4, 5). Length 9.0 mm. Sichuan *S. brezinae* sp. n.
- Tempora only slightly longer than eyes seen from above (ratio 1.10). Pronotum shorter, vaguely shorter than width at widest point at about middle (ratio 0.94), from there about equally narrowed both anteriorly and posteriorly, but vaguely concavely so posteriorly. Aedeagus smaller, median lobe markedly asymmetrically constricted in middle portion, differentiated apical portion of paramere of triangular shape (Figs 9, 10). Length 7.9 mm. Sichuan *S. sichuanense* sp. n.

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SOUHRN

Předložená práce podává popisy čtyř nových druhů drabčíků rodu *Strouhalium*, a to jednoho z Himalájí a tří z Číny, dále pak klíč všech dosud známých druhů tohoto rodu a diskusi o vztazích rodů *Strouhalium* a *Heinzia*.