

On Recent Knowledge on the Sap-Beetles (Coleoptera, Nitidulidae) of India

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This paper is aimed to present a general review of the Nitidulidae according to the modern taxonomic interpretation of the system of this family and give some preliminary comments and references on the publications that appeared after the catalogues by A. Grouvelle in the Junk's series (1913a). The generic and suprageneric division has been elaborated in some publications (Jelinek, 1975b etc.; Kirejtshuk, 1979 etc.; Audisio and Jelinek, 1993) and the last writer's interpretation of system of the family is accepted here (Kirejtshuk, 1994a). The specimens for the study of the Indian Nitidulidae were taken from many collections, mainly from the largest museums of the world. Some specimens of many species recorded from India are now deposited in the collection of Zoological Institute of the Russian Academy of Sciences (ZISP). The paper represents only a kind of preliminary abstract from materials which will be published in the monograph by the writer devoted to the Nitidulidae of the Himalayas and northern Indo-China (Kirejtshuk, in press and in litteris). Unfortunately, the Nitidulidae of the most central and southern territories of India are less studied than northern parts of India and given below have a very preliminary character. A further additional study of sap-beetles of the territories to the south valleys of rivers Indus and Ganges are rather advisable. The subfamily Calonecrinae can scarcely be expected from India, although for now this group is known only from Malacca peninsula and island system of the Malayan province.

Abbreviations of depositories mentioned in the text

NHML- Natural History Museum [formerly British Museum (Natural History)] London;

SMNS- Staatliches Museum für Naturkunde, Stuttgart;

ZISP- Zoological Institute of the Russian Academy of Sciences, St-Petersburg;

ZMB- Meseum für Naturkunde an der Humboldt-Universität, Berlin;

ZSM- Zoologische Staatssammlung, München.

COMPOSITION OF FAUNA

1. Subfamily Epuraeinae

This subfamily has its principal distribution in the Eastern Hemisphere, and only *Epuraea* (*Haptoncus*) *luteola* Erichson, 1843 and representatives of the subgenus *E. (Amedanyraea)* Kirejtshuk et Pakaluk, 1996 occurred in South America before the spread of some epuraein species from other tropical and subtropical territories due to introduction by man [mostly species from the subgenus *E. (Haptoncus)* Murray, 1864]. The most numerous group of the subfamily [subgenus *E. (Epuraea)* Erichson, 1843 s. str.] is mainly distributed in the Palaearctic and Indo-Malayan regions, although on the territory under considerations they are predominantly present in the northern mountains. Bionomy of the subfamily is highly variable, however, most representatives of numerous, abundant and generalized groups [subgenera *E. (Epuraea)* s. str., *E. (Epuraeanella)* Crotch, 1874 and *E. (Micruria)* Reitter, 1874] are mostly connected with arboricolous fungi. Some species are known as predators on soft invertebrates, up to specialized predation on larvae of *Scolyidae* (Coleoptera). Many groups include some forms with mycetophagous

larvae and anthophagous imagines, but other groups are completely anthophagous (see below).

Genus *Epuraea* Erichson, 1843

I. Subgenus *E. (Haptoncurina)* Jelinek, 1977 is represented by 3 species, including *E. (H) motschulskyi* (Reitter, 1873) widely distributed in tropical and subtropical regions of the East Hemisphere and 2 other rare species. Species of this group at least in imaginal stage are anthophagous.

II. Subgenus *E. (Haptoncus)* Murray, 1864 includes 4 common species widely distributed through tropical and subtropical regions of the globe or at least in the East Hemisphere.

Its species are mycetophagous and connected with different substrates of dead plants (usually with soft decaying fruits), but some of them are partly or completely anthophagous.

III. Subgenus *E. (Epuraea)* S. str. has 22 species recorded on the territory under consideration and adjacent districts of the Himalayas (Pakistan, Nepal and Bhutan). Almost all of them are characterized by inhabitation in the northern mountain districts, although *E. (E) indica* Grouvelle, 1984 has been collected in the southern part of India (Karnataka). Most species inhabit in subcortical places infected by fungi or fermenting tree sap.

IV. Subgenus *E. (Micruria)* Reitter, 1875 is distributed mostly in the Palaearctic Far East and northern parts of the Indo-Malayan region. Thirteen species of this group are known from the northern Indian mountains (also Pakistan, Nepal and Bhutan) and the range of *E. (M.) grouvellei* Jelinek, 1978 embraces southern districts to West Bengal. Many species at least in imaginal stage are anthophagous and frequently with larvae breeding in decaying flowers and fruits.

V. Subgenus *E. (Epuraeanelia)* Crotch, 1874 with its range in the Holarctic regions and continental part of the Indo-Malayan region includes 2 species more or less common throughout the Himalayas. Species of it seem to be associated with fruitbodies of arboricolous fungi.

Genus *Grouvelia* Kirejtshuk, 1984

This genus is represented by single species [*G. picea* (Reitter, 1873)] which is known from Darjeeling (Assam), Myanmar (Burma), North Vietnam and breed with flowers of *Pandanus*.

Genus *Propetes* Ritter, 1875

Species of this genus seem to have their bionomy similar to that of the representative of previous genus and widely spread in different insular systems of the Indian and Pacific oceans as well as in the continental part of the Indo-Malayan and Australian regions, but on the territory under consideration only *P. (Propetes sensu stricto) nigripennis* Redtenbacher, 1867 [India, Assam; Sri Lanka (Ceylon); Myanmar (Burma); Vietnam; Malaysia, Pahang; Indonesia, Lombok; Taiwan; Japan, Ryukyu] occurs.

Genus *Tetrisus* Murray, 1864

This genus consists of two subgenus, one of which [*T. (Trimenus)*] has the maximum diversity (five species) in mountain districts of the territory under consideration, although *T. (T) curvipes* Grouvelle, 1908 has caught also in Tamil Nadu; *T. (T) hydroporoides* Murray, 1864- in Kerala; and *T. (T) parallelipedus* (Motschulsky, 1863) with its range extended beyond the Indo-Malayan region can be expected almost everywhere in India. Species of this group are usually collected with representatives of *Epuraea* (*Haptonous*).

Genus *Taenioncus* Kirejtshuk, 1984

Two widely distributed species of this genus [*T. cylindricus* Murray, 1984; *T. tenuis* Murray, 1864 found in many parts of Indo-Malayan and Australian regions]

are collected with flowers and decaying soft fruits.

Genus *Raspinotus* Kirejtshuk, 1990a, stat. n.

This genus is composed of some rare species, one of which comes at least to the southern India (*R. excellens* Kirejtshuk, 1990a - Tamil Nadu, Java, Imugan). The representatives of this genus have their bionomy similar to that of the previous genus.

New genus *Kirejtshuk*, (In press)

Some species probably anthophagous and formerly described as *Carpophilus* Stephens, 1830 should be regarded as a representative of one new genus of the subfamily Epuraeinae (Kirejtshuk, in press), and one of them has been collected in the Himalayan part of India.

2. SUBFAMILY CARPOPHILINAE

This subfamily is rather numerous in species, which are divided into few genera and subgenera, some of which due to spread by man reach almost worldwide in distribution [subgenera *Carpophilus* (*Carpophilus*) Stephens, 1830 s. str.; *C. (Myothorax)* Murray, 1864; *Urophorou* (*Anophorus*) Kirejtshuk, 1990b]. Most diversity of this subfamily is attributed to the regions with tropical climate. This subfamily, as the Epuraeinae, mostly includes the species, most of which are recorded only in the northern mountain part of India, but less number of species are characterized with their range enclosed many provinces of India, and only few species occur on the south rather than on the north. Bionomy of the subfamily is less variable in comparison with the previous one, mostly represented by forms associated with fungi in subcortical habits or with decomposed plant substrates of different consistency in natural and artificial conditions, including grain, corn and fruits. Some species live in flowers and a few of them pass their larval development there.

Genus *Carpophilus* Stephens, 1830

I. Subgenus *C. (Carpophilus)* s. str. It has world wide range and 14 species have been recorded from India, mostly from northern mountain districts (and also Rajasthan), but *C. (C) jelineki* Audisio et Kirejtshuk, 1988 and one species still undescribed (Kirejtshuk, in litteris) were mainly collected in the southern states of India (Maharashtra, Karnataka, Kerala, Tamil Nadu). *C. (C) bifenestratus* Murray, 1864; *C. (C) delkeskampii* Hisamatsu, 1963; *C. (C) hemipterus* (Linneus, 1758); *C. (C) marinellus* Motschulsky, 1858; *C. (C) obsoletus* Erichson, 1843 and *C. (C) undulatus* Grouvelle, 1908 are common in most Indian states. Species of this group live in various places with fermentating plant products and imagines not infrequently visit flowers.

II. Subgenus *C. (Megacarpolus)* Reitter, 1919. It is characterized by its holarctic range and is represented on the territory under consideration by 2 species captured in the Himalayas. Mode of life of species of this group seems to be connected with life in decaying soft fruits and subcortical habits.

III. New subgenus (Kirejtshuk, in litteris). It is mainly distributed in the Palaearctic Far East, Indo-Chinese province and Himalayas and is represented by 3 species, imagines of which are frequently collected on flowers.

IV. Subgenus *C. (Myothorax)* Murray, 1864. It has 6 species recorded in many provinces of India, some of them are very abundant among nitidulid species inhabiting artificial conditions (stored products). In particular, they are widely spread *C. (M) dimidiatus* (Fabricius, 1792); *C. (M) mutilatus* Erichson, 1843; *C. (M) nepos* Murray, 1864 and *C. (M) fumatus* Boheman, 1851. In natural conditions, species of this group live in various places with fermenting plant products and imagines usually visit flowers.

V. Subgenus *C. (Ecnomorphus)* Motschulsky, 1858. It has nearly worldwide range with most diversity in the Indo-Malayan region. Many members of

this group are distributed in both the Himalayas and northern Indo-China. In particular, all the species recorded from India have been collected only in the Himalayas, but *C. (E) plagiatiennis* (Motschulsky, 1858), comb.n. has much wider range, embracing many states of India and most parts of the Indo-Malayan region.

Genus *Nitops* Murray, 1864.

This group is rather characterized for the western Hemisphere and only few species are known from the Eastern one. The lone species [*N. (Nitops) pubescens* Murray, 1864] is recorded from the territory under consideration from the specimens from the Nietner's collection deposited in Berlin (ZMB). These specimens (types) were collected according to the original description from Sri Lanka (Ceylon) and according to the labels under the specimens from "Bengalen" (West Bengal or Bangladesh). The origin from India seems quite probable because this species was also recorded from Yunnan (Grouvelle, A. 1908 - Coleopteres de la region indienne.... Annales de la Societe Entomologique de France, 77: 315-495).

Genus *Urophorus* Murray, 1864

Initial range of this genus seemed to be restricted in the Palaearctic [subgenus *U. (Urophorus)* s. str. with centre in Mediterranean province] and Indo-Malayan regions [*U. (Anophorus)* Kirejtshuk, 1990b - Himalayas and Indo-China], however, the species of the latter are also distributed in the Afro-Madagascan regions, and *U. (A) humeralis* (Fabricius, 1801) reaches almost cosmopolitan distribution. Besides the mentioned species, other 3 species of [*Urophorus* (*Anophorus*)] have been collected in the Himalayas, although most species of this subgenus have originated from Indo-China.

3. SUBFAMILY AMPHICROSSINAE

This subfamily is represented by the only genus with a range including subtropical and tropical regions of the globe. This group shows the most diversity in the Afro-Madagascan and Indo-Malayan regions. Nevertheless, only 4 species of *Amphicrossus* Erichson, 1843 are collected in the Himalayan part of India. Two of them [*A. oblongus* Grouvelle, 1897 and *A. piceus* (Motschulsky, 1863), non Fairmaire, 1892] go in many districts of India and other parts of this zoogeographic region. The centre of diversity of this group in the Indo-Malayan region is located in Indo-China, Malaysian and Indonesian insular systems. Finally, *A. muticus* Grouvelle, 1908 is known from Nilgiri Hills only. Most species of this genus live and probably develop in exuded tree saps, but some species from the Afrotropical region inhabit in ant nests.

4. SUBFAMILY MELIGETHINAE

This subfamily is rather numerous in species, but restricted in distribution - mostly Euro-Asian supercontinent and Africa, few species occur in the Nearctic and Madagascan regions; only one species of *Pria* Stephens, 1830 is recorded on the island systems of the Malayan province (*P. pallida* Fabricius, 1801), another on New Caledonia (*P. deplanta* Reitter, 1872) and at least one another - in Australia (*P. pumila* Cooper, 1982). The Indo-Malayan fauna of this subfamily is comparatively scanty and most Indo-Malayan species of it are known namely from India, and only few of them are characterized for South East Asia and Taiwan. Bionomy of all representatives of this subfamily is rather uniform and defined by their life and development in flowers of the Angiosperms.

Genus *Pria* Stephens, 1830

This genus is extremely abundant in Africa and Madagascar, but has only 2 Indo-Malayan representatives - *P. pallida* Fabricius, 1801 widely distributed in the region (upto Ceram and Mindanao) and *P. ceylonica* Grouvelle, 1902 known from southern India (Tamil Nadu) and Sri Lanka. Many species of this genus are associated with flowers of the family Solanaceae.

Genus *Meligethinus* Grouvelle, 1906

This genus consists of members distributed in Africa and Indo-Malayan region and the only representative of it is endemic for the Mediterranean province. Three species of this genus occur in the northern mountain part of India [*M. apicalis* (Grouvelle, 1894); *M. plagiatus* (Grouvelle, 1894); *M. quadricollis* Kirejtshuk, 1987] and one species is described from southern India (*M. grouvellei* Kirejtshuk, 1980 - Tamil Nadu).

Genus *Cyclogethes* Kirejtshuk, 1979

This genus is distributed only in the Himalayas (one species - *C. alridgei* Kirejtshuk, 1980) and North Vietnam (three endemic Indo-Chinese species).

Genus *Kabakovia* Kirejtshuk, 1979

This genus is represented by lone species [*K. latipes* (Grouvelle, 1908)] connected with inflorescence of *Arenga* (f.i. *A. pinnata*) and recorded from Nepal, southern India (Tamil Nadu) and North Vietnam.

Genus *Meligethes* Stephens, 1830

I. Subgenus *M. (Meligethes)* s.str. has the most diversity in the Palaearctic Far East (14 species) and Himalayas (6 species), although 3 species of the palaearctic group spread through the whole woody zone and *M. (M) vulpes* Solsky, 1876 recorded from the mountains of Middle Asia, Afghanistan, Pakistan, Himalayas and Myanmar (Burma). All species with known bionomy are connected with flowers of the Rosaceae.

II. Subgenus *M. (Clypeogethes)* Scholtz, 1932 is represented by rather numerous politus - group (Thirteen species - endemic for the Indian and Indo-Chinese provinces, including 7 species from India, mostly southern provinces) and also some species with separate position within members of the subgenus [*M. (C) braeti* Grouvelle, 1894, comb. n.; *M. (C) cardoni* Grouvelle, 1894, comb. n.; *M. (C) himalayensis* Kirejtshuk, 1980, comb. n.; *M. (C) topali* Kirejtshuk 1988, comb. n.]. Species of this group live in flowers of plants from different families of Magnoliopsida (Dicotyledones).

5. SUBFAMILY NITIDULINAE

This subfamily has the maximum diversity in structure and is most abundant in species among the family and divided into some tribes (Nitidulini, Mystropini, Cychramini, Strongyliini, Cychramptodini and Lawrenceosini), three of them are recorded in India (see below). This subfamily is represented in all zoogeographical regions having many of endemic groups in each of them. India can be characterized by some extent of species endemism (mostly in the Himalayan part), but absence of generic or subgeneric endemism. As Indo-Chinese province, the territory under consideration has rather rich fauna of different groups of the tribe *Strongyliini*, showing the most diversity of this tribe in Central America (mainly genus *Camptodes* Erichson 1943 and closest groups) and in the Himalayan and Indo-Chinese part of the Indo-Malayan region (mainly genera *Cyllodes* Erichson 1843). Bionomy of the subfamily is extremely variable, however, most representatives are connected with arboricolous fungi and only some are adhered to terrestrial or subterranean habits. Some groups include forms with mycetophagous larvae and anthophagous imagines, but a few groups are completely anthophagous.

A. TRIBE NITIDULINI

Genus *Nitidula* Fabricius, 1775

This genus is characterized by the holarctic initial range and composed of species breeding in carrion and fungi. Some species of the genus live in garbage and industrial waste with animal remnants and, therefore, they can spread by man in different zoogeographical regions. On the territory under consideration *N. carnaria*

(Schaller, 1783) [NHML - "Parachinar, Kurram Valley" and ZSM - Laos] and *N. flavomaculata* Rossi, 1790 [ZMB - Calcutta and SMNS - "Tonkin"] have been collected.

Genus *Omasita* Erichson, 1843

This group has its range and bionomy similar to those in the previous genus. Some of its species have secondarily spread in different zoogeographical regions. In particular, *O. (Saprobia) discoidea* (Fabricius, 1775) has been recorded in the northern states of India.

Genus *Soronía* Erichson, 1843

This genus is known almost from all zoogeographical parts of the globe, however, the most diversity of it was recovered in the mountains of northern India, Central and Southern China, and also in northern Indo-China. At least 5 species have been collected in the Himalayas, while there is no record is from southern states of India.

Genus *Axyra* Erichson, 1843

Most species of this genus occur in Africa (to the south from Sahara) and the single and rather rare Indo-Malayan species (*A. setosa* Murray, 1867) is recorded from India, Indo-China and Java.

Genus *Megauchenia* Macleay, 1833

This genus is endemic for the Indo-Malayan region (Eleven species) and *M. indica* Grouvelle, 1908 is endemic for India, although 2 other widely distributed species of the genus are also known from the territory under consideration [*M. angustata* (Erichson, 1843); *M. quadricollis rotundata* Kirejtshuk, 1990a]. All the members of the genus have been captured in mountains; they usually live under the bark, frequently in holes of representatives of the genera *Acerarius* Kaup, 1871 and *Leptaulax* Kaup, 1871 (Coleoptera, Passalidae).

Genus *Prometopia* Erichson, 1843

This genus is distributed in all regions with tropical and subtropical climate (some species reach the territory with temperate climate in the Nearctic region and Palaearctic Far East). Its species usually live in subcortical habitats. Except *P. quadrimaculata* Motschulsky, 1863 (widely spread in Indo-Malayan, Polynesian and Australian regions, as well as Palaearctic Far East; *P. brevis* Jelinek, 1978; *P. gracilis* Grouvelle, 1908; *P. setosula* Grouvelle, 1894 are recorded from the northern Indian states, and one Indo-Chinese species remaining undescribed (Kirejtshuk, in litteris) has been captured in Andaman islands.

Genus *Parametopia* Reitter, 1884

This genus is endemic for the Indo-Malayan region and has its bionomy very similar to that in the previous genus. *P. concolor* Grouvelle, 1891; *P. indica* Grouvelle, 1884; *P. tripunctata* Grouvelle, 1908 occur in the northern Indian states, including Rajasthan and West Bengal.

Genus *Ipidia* Erichson, 1843

Few species of this genus are distributed only in the Palaearctic region and mountains of the northern part of the Indo-Malayan region (including Malayan province). *I. (Hemipidia) sjoeborgi* Jelinek, 1978 (both with rather wide range extended beyond the territory under consideration) have been recorded in the Eastern Himalayas.

Genus *Lordites* Erichson, 1843

1. The subgenus *L. (Lordites)* s. str. is rather abundant in tropical and subtropical parts of Africa, Madagascar and Asia, showing the most diversity in the Afro-Madagascarean regions. The fauna of continental part of the Indo-Malayan regions includes all the species characterized for this region. They are *L. (L.) aethinodes* (Reitter, 1873), comb.n.; *L. (L.) chevrolati* (Reitter, 1873), comb.n.; *L.*

(*L.*) *pictus* (Macleay, 1825), comb.n. registered in many parts of India and other territories of the region; and also *L.* (*L.*) *inaequalis* (Grouvelle, 1914), comb.n. and *L.* (*L.*) *monticola* (Grouvelle, 1910) comb.n. for now captured only in Nepal, but expected in other parts of the Himalayas. Species of this group are usual inhabitants of litter of plant origin and decaying fruits.

II. The subgenus *L.* (*Plesiorthina*) Kirejtshuk, 1990a, stat.n. is composed of few species distributed through the Indo-Malayan and Australian regions. *L.* (*P.*) *pardalis* (Reitter, 1875), comb.n. has been rather rarely collected in different parts of India, Southern East China, Philippines and Java, and *L.* (*P.*)? *amplificator* (Hisamatsu, 1956), comb.n. is recorded in southern Japan, China, Vietnam and Nepal. The bionomy of the species of this group is similar to that of the previous genus.

Genus *Stelidota* Erichson, 1843

This genus is distributed in all regions with tropical and subtropical climate with the most diversity in the Neotropical region. Species of this group usually occur with representatives of the former genus. *S. nigrovaria* (Fairmaire, 1849) and *S. multiguttata* Reitter, 1877 are common in many parts of India, but *S. franzi* Jelinek, 1984 and *S. nepalensis* Jelinek, 1984 have been recorded from Nepal and Indo-China.

Genus *Ussuriphia* Kirejtshuk, 1992

One species of this genus is found in the Palaearctic Far East and another in Nepal.

Genus *Pocadius* Erichson, 1843

This genus with its worldwide range and tropic connection with terrestrial fungi from the Lycoperdales is represented in India by a single species (*P. testaceus* Grouvelle, 1892).

Genus *Pocadites* Ritter, 1884

This genus includes a few species and has its range restricted by the Palaearctic Far East and mostly continental part of the Indo-Malayan region. In the Indian Himalayas *P. corpulentus* Reitter, 1884 (Darjeeling) and new species (Kirejtshuk, in litteris) have been collected, and another new species will be described from Nepal.

Genus *Hebascillinus* Kirejtshuk, 1992

This group with few species has a range rather similar to that of the previous genus. The single species of it [*H. insularis* (Grouvelle, 1908)] was described from Andaman islands.

Genus *Physoronia* Reitter 1884

P. (Lordiodes) dentipes Jelinek, 1978 was described from Bhutan and *P. (Pocadioides) harmandi* (Grouvelle, 1903) is rather common in the Himalayas and probably associated with terrestrial fungi (mostly from Lycoperdaceae).

Genus *Aethina* Erichson, 1843

I. The Subgenus *A.* (*Aethina*) s. str. with its range in Afro-Madagascarean and Indo-Malayan regions and also with one isolated species spread in Central America has the most diversity in the south part of the Palaearctic Far East, Himalayas and northern Indo-China. Most species are mycetophagous (at least at larvae), but some imagines are regular visitors of flowers. Nine species of the subgenus have been recorded from the Indian Himalayas and *A. (A.) humeralis* (Grouvelle, 1890) has been collected in Nepal.

II. The subgenus *A.* (*Circopes*) Reitter, 1873 is distributed in regions of the Eastern Hemisphere with tropical and subtropical climate (including Palaearctic Far East), showing the most diversity in the Himalayas, Indo-Chinese and Malaysian

provinces. This group has a scope of its bionomy partly similar to that in the previous subgenus, although many species of *A. (Circopes)* breed in flowers of the Angiosperms and male cones of the Gymnosperms. Except *A. (C.) subquadrata* (Motschulsky, 1858) is widely distributed in the Indo-Malayan region, three species are recorded from the Indian Himalayas, although *A. (C.) topali* Kirejtshuk, 1986a is available in Orissa. Finally, *A. (C.) jelineki* Kirejtshuk, 1986a is known only from Nepal and Taiwan.

III. The subgenus *A. (Olliffura)* Jelinek et Kirejtshuk in Kirejtshuk, (1986a) includes some species occurring in the very south of the Palaearctic Far East, Indo-Malayan and Australian regions upto New Zealand, Bismarck Island, Tonga, West-Samoa and New Caledonia. All these are connected with flowers of Malvaceae (mostly *Hibiscus*). *A. (O.) orientalis* (Nietner, 1856, non Olliff, 1884) is recorded from Southern India (up to Orissa), Sri Lanka and Sumatra, and *A. (O.) subrugosa* (Grouvelle, 1894) - from Nepal, Uttar Pradesh, southern China, Myanmar (Burma), Thailand and Vietnam. Besides, *Aethina (O.) obscura* Reitter, 1873 has been captured in the Himalayas and North Vietnam.

Genus *Anister* Grouvelle, 1901

This genus is known from Africa and Indo-China and can be expected on the territory under consideration. Its species are mining the leaves of plants from the Brassicaceae.

Genus *Thalycra* Erichson, 1843

This genus is distributed mostly in the Nearctic region, but one species widely spreads in the western part of Palaearctic region, and *T. wittmeri* Jelinek, 1982 is recorded from Afghanistan and Pakistan (Kirejtshuk, in litteris). All species of this group are connected with subterranean fungi [usually from the genus *Rhizopogon* (Gasteromycetes)].

B. TRIBE CYCHRAMINI

Genus *Cychramus* Kugelán, 1794

This genus with its worldwide range is represented on the territory under consideration by *C. antennatus* (Grouvelle, 1908) comb. n. recorded in Nepal, Bhutan and Sikkim. Species of this group are completely mycetophagous on fruitbodies of arboricolous fungi or characterized by mycetophagous larvae and anthophagous imagines.

Genus *Strongyloides* Kirejtshuk, 1992

This genus is comparatively rare in collections having a dozen members distributed in the tropical and subtropical territories of the Eastern Hemisphere, including the Palaearctic Far East. *S. dorsalis* (Grouvelle, 1908) is known from South India, Sri Lanka and Vietnam.

C. TRIBE STRONGYLINI

Genus *Cyllodes* Erichson, 1843

This group with its worldwide range is most abundant in the Himalayas and Indo-China, although the Indo-Malayan region is a centre of the most diversity of it. Excepting *C. indicus* Grouvelle, 1894 (widely distributed in India), six species have been collected in the Indian Himalayas and else six are known from Nepal only. Finally, *C. andamanensis* Grouvelle, 1908 and *C. aglioides* Kirejtshuk, 1985 are recorded from Andaman islands and Sri Lanka. Species of this genus are completely mycetophagous.

Genus *Viettherchnus* Kirejtshuk, 1985

This genus is endemic for the Indo-Malayan region and is known from the territory under consideration after *V. finitimus indiensis* Kirejtshuk et Kirk-Spriggs, 1996. Species of this genus appear to be completely mycetophagous.

Genus *Neopallodes* Reitter, 1884

This group is endemic from the Palaearctic far East and mountains of the Indo-Malayan region and has the diversity in the Himalayas and mainly in Indo-China. Only four species are known from the northern states of India, but other five species have been recorded from Nepal. Species of this genus appear to be completely mycetophagous and partly connected with terrestrial habits.

Genus *Pallodes* Erichson, 1843

I. New subgenus with one new species will be described from Tamil Nadu (Kirejtshuk, in litteris).

II. Subgenus *P. (Coxilodes)* Kirejtshuk, 1987c with its most diversity in the Papuan province and Australian regions is represented in the Indian Himalayas by *P. (C.) cyrtusoides* Reitter, 1884 widely distributed in the southern parts of the Palaearctic Far East and Indo-Malayan region and closely related *P. (C.) aff. reitteri* Kirejtshuk, 1987c. Species of this genus appear to be completely mycetophagous.

III. Subgenus *P. (Pallodes)* s. str. with almost worldwide range has the most diversity in the Indo-Malayan and Australian regions. Six species are collected in the northern states of India (mainly Himalayas), one species from Nepal, and one species from Tamil Nadu will be described (Kirejtshuk, in litteris).

Genus *Oxycnemus* Erichson 1843

This genus is known mostly from the Neotropical region, and only a few species of the subgenus (*Eugonipus*) Reitter, 1884 are recorded from the Palaearctic Far East and Indo-Chinese province, including Myanmar (Burma), Vietnam and Tibet. Species of this genus live in stinkhorn fungi (*Phallus* spp.).

Genus *Tricanus* Erichson, 1843

This group is endemic for the Indo-Malayan region. The widely distributed *T. apicalis* (Erichson, 1843) is recorded from the Himalayas and *T. nigripennis* Reitter, 1873 - from Andaman islands. Species of this genus live in stinkhorn fungi (*Phallus* spp.).

6. SUBFAMILY CILLAENAE

This subfamily is characterized for all regions with tropical and subtropical climate, but some species of *Coopterus* Erichson, 1843 and *Conotelus* Erichson, 1843 are more or less usual in the fauna of the Nearctic region and a few species of *Brachypeplus* Erichson, 1843 secondarily spread as pests of store products. The most diversity of this subfamily is recovered in the faunas of Hawaii and the Neotropical region, although many of its representatives which occur in the Afro-Madagascarean, Indo-Malayan, Australian and Polynesian regions. The Indian fauna in comparison with other provinces of the Indo-Malayan region is not very abundant, showing the most diversity in the Himalayas. Bionomy of the subfamily is not so variable, however, most representatives are connected with arboricolous fungi and live in subcortical habits, fermenting tree sap and so on. Some groups include forms with mycetophagous larvae and anthophagous imagines or representatives, have completely become anthophagous.

Genus *Ecnomaeus* Erichson, 1843

This genus is rather usual for the Africa (to the south from Sahara), but *E. haroldi* Reitter, 1873 and *E. waterhousei* Grouvelle, 1908 were collected in the Himalayas.

Genus *Colopterus* Erichson, 1843

This genus is very abundant, but distributed mainly in the Western Hemisphere. Only two species are known from the Himalayas and Indo-China, including *C. modiglianii* Grouvelle, 1897 collected in Nepal and Darjeeling. Many species of this genus have got imaginal or complete anthophagy.

Genus *Brachypeplus* Erichson, 1843

This genus with its range in all regions with tropical and subtropical climate has a comparatively scanty representation on the territory under consideration. Except *B. (Brachypeplus) aequalis* (Walker, 1858) (widely distributed in the Indo-Malayan region and rather common in many states of India), *B. (B.) feai* Grouvelle, 1892 and *B. (B.) hispidulus* Grouvelle, 1897 are recorded from the Himalayan part. Species of this group are mycetophagous and usual in subcortical habits and some of them have become anthophagous.

Genus *Cillaeus* Castelnau, 1835

This genus is widely distributed in regions with tropical climate, but represented on the territory under consideration by only *C. latus* Grouvelle, 1908 (Nilgiri Hills). Species of it are mycetophagous and usual in subcortical habits.

Genus *Platymena* Ritsemā, 1885

This genus is endemic for the Indo-Malayan region and represented on the territory under consideration only by *P. breviceps* Murray, 1864 and *P. olliffi* Ritsemā, 1885 from Andaman and Nicobar islands, and also one undescribed species from the Himalayas and northern Indo-China (Kirejtshuk, in litteris).

7. SUBFAMILY CRYPTARCHINAE

This subfamily is represented in all zoogeographical regions, except the Polynesian one. The most diversity of it is recovered in the Neotropical region, but in the other regions, it is represented by comparatively small number of the both genera and species. The family is divided into three subfamilies (Cryptarchini, Eucalospherini and Arhinini), two of which are known from the territory under consideration. Over three fourth of members of this subfamily belong to the genus *Cryptarcha* Chuckard, 1839 with the widest range embracing all regions, except the Polynesian one, while other genera have much more restricted distribution (widest one gives the genus *Glischrochilus* Reitter, 1873 with its Holarctic and Indo-Malayan range). Bionomy of this subfamily is more or less similar and connected with mycetophagy in subcortical and similar habits, although many species of *Cryptarcha* and other genera breed in exuded tree sap. Some species are recorded as predators on soft invertebrates in the mentioned places, up to specialized predation on larvae of *Sculytidae* (Coleoptera).

A. TRIBE CRYPTARCHINI

Genus *Cryptarcha* Chuckard, 1839

This genus includes about 150 species, most of them occur in the Neotropical region. *C. maculata* Reitter, 1873 has its range almost coinciding with the outline of the Indo-Malayan region and is recorded from many states of India - from the Himalayan ones to Kerala and Tamil Nadu. *C. dubia* Grouvelle, 1889, *C. inhalita* Reitter, 1884 and *C. lewisi* Reitter, 1873 inhabit in the Himalayas, but *C. wallacei andrewesi* Grouvelle, 1908 has been captured in Nilgiri Hills and Sikkim. Species of this group are completely mycetophagous and usually live under bark and in exuded tree sap.

Genus *Glischrochilus* Reitter, 1873

This genus is mainly distributed in the Holarctic and Indo-Malayan regions. It is divided into 3 subgenera and only one of them [*G. (Librodor)* Reitter, 1884] is recorded from the territory under consideration. The mentioned subgenus is endemic of Palaearctic Far East and Indo-Malayan region, having the most diversity in the Himalayas and Indo-China. In the Himalayan part of India, six species and in Nepal, only four species of this subgenus have been collected. Besides, there are *G. (L.) mirabilis* Jelinek, 1975 described from Myanmar, (Burma) and India ("Trichinopoly"), and *G. (L.) rufocapillatus* Jelinek, 1982 described from Anamalai

Hills. Species of this group are completely mycetophagous and usually under bark and in exuded tree sap.

Genus *Platyarcha* Kirejtshuk, 1987b

This genus is represented by two species from "Indes orientalis" [*P. biguttata* (Motschulsky, 1858), comb. n.] and Thailand [*P. pacta* Kirejtshuk, 1987b].

B. TRIBE EUCALOSPHAERINI

Genus *Eucalospaera* Jelinek, 1978

This genus is distributed only in the Himalayas, Indo-Chinese and Malayan provinces, showing the most diversity in Indo-China. *E. feai* (Grouvelle, 1892), *E. nigropunctata* (Grouvelle, 1892), *E. ocularis* (Reitter, 1875) and *E. rufescens* Kirejtshuk, 1987b have been collected on the territory under consideration.

8. SUBFAMILY CYBOCEPHALINAE

This subfamily is represented in all zoogeographical regions, although the most of its diversity is recovered in the tropical and subtropical parts of the Eastern Hemisphere (especially in southern part of the Palaearctic and Afro-Madagascarean regions). It can be expected that the fauna of the Indo-Malayan region, including Indian province, is rather little - known, as the representatives of this subfamily have been rarely collected because of small size of their body and great mobility of living beetles. The members of this subfamily are divided into few genera with very restricted ranges, but most of them belong to the genus *Cybocephalus* Erichson, 1844. All the species of the subfamily with known biology are predators on scale insects and whiteflies (Homoptera) in both the larval and imaginal stages.

Genus *Cybocephalus* Erichson, 1844

According to the specimens available to the writer, this genus with its almost worldwide range (except subpolar part of the Holarctic regions) has lesser presentations in the Indian province in comparison with surrounding territories. Moreover it is more diverse in central and southern parts of India (seven species) than in northern mountainous part (four species), although both the small numbers seem to be a sequence of deficiency of knowledge. Species of this group are predators on scale insects and whiteflies (Homoptera) in both the larval and imaginal stages.

Genus *Taxicephomerus* Kirejtshuk, 1994c

This genus is as yet represented by the single species described from Vietnam [*T. porrectus* Kirejtshuk, 1994c].

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