Redescription of *Dendrolasma parvula* (Suzuki) from Japan  
(Arachnida, Opiliones, Dysnoid)

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ABSTRACT

A Japanese dicranolasmid harvestman, *Cladolasma parvula* Suzuki proved to be a member of the *Dendrolasma* so far known only from Washington State of the United States of America. The genus *Cladolasma* is synonymized with the *Dendrolasma* and the species is redescribed under the name of *Dendrolasma parvula*.

After examining newly collected material of a remarkable Japanese trogulid, *Cladolasma parvula* Suzuki, 1963, it became evident that the original description was based on the subadult specimens and that the species was to be placed under the genus *Dendrolasma* recorded from Washington State of the United States of America. Accordingly, it is amended as *Dendrolasma parvula* and redescribed here basing upon the adult specimens.

Suborder Dyspnoid
Family Trogulidae
Subfamily Dicranolasmatinae

*Dendrolasma* Banks, 1894

*Dendrolasma* Banks, 1894, Psyche 7: 12. Type-species: *Dendrolasma mirabilis* Banks, 1894.


The genus *Cladolasma* was created for *Cladolasma parvula* Suzuki, 1963. However, comparison of the type specimens and newly collected examples revealed that the species was originally described basing upon the subadult specimens, and that its adult specimens agreed in all characters with the *Dendrolasma* known from Washington State of the United States of America. As a result, *Cladolasma* should be synonymized with *Dendrolasma*.

Concerning the familial placement of the genus *Dendrolasma* there is some doubt. On the basis of the resemblance in general appearance: the presence of a prominent median process and one pair of lateral horns on the anterior border of cephalothorax, etc., this genus was placed under the family Trogulidae (Banks, 1894; Roewer, 1923, 1950; Suzuki, 1963). But it differs from most members of that family by having scutum parvum: the thoracic and abdominal plates are separated. On the other hand, it has a considerable resemblance to the Nemastomatidae in many respects such as the shape and spination of penis, the "Kugel-
"haare" of palpi, and the spines of the distal segments of chelicerae. The main characters separating it from that family are the presence of the characteristic armaments on the anterior margin of cephalothorax and the possession of scutum parvum. The *Dendrolasma* together with two closely related genera, *Ortholasma* (United States, Mexico) and *Trilasma* (Mexico) may be assigned to the separate family Dicranolasmatidae.

*Dendrolasma parvula* (Suzuki, 1963)

(Figs. 1-3)


**Specimens examined:** 1 ♀, 1 pull., Mt. Kunimi-yama, Tokushima pref., 31-VII-1966 (Keiji Tomishima); 1 ♂, 3 ♀, 5 pull., Mt. Ishizuchi-yama, Ehime pref. (from 1,320 m to 1,400 m in altitude), 2-VIII-1967 (S. Suzuki); 1 ♂, 2 pull., same locality, VII-1968 (Hirosi Sako); 1 pull., Mt. Higashi-akaishi-yama, Uma-gun, Ehime pref., (1,000 m in height), 27-X-1968 (Kazuo Ishikawa); 4 ♂, 3 ♀, 3 pull., Mt. Ishizuchi-yama (1,380 m to 1,500 m in height), 31-VII-1969 (S. Suzuki); 3 ♂, 2 ♀, 2 pull., same locality, 29-VII-1970 (S. Suzuki); 3 ♂, 2 ♀, 1 pull., same locality, 12/13-VII-1971 (S. Suzuki); 2 pull., Mt. Kōtsuzan (1,123 m), Yamakawa-cho, Oō-gun, Tokushima pref., 29/30-IV-1972 (K. Tomishima); 3 ♂, Mt. Ishizuchi-yama, 24/25-VII-1973 (S. Suzuki), 2 ♂, 1 ♀, same locality, 12-VIII-1974 (S. Suzuki).

**Male.**

Very small animal, body somewhat flattened dorso-ventrally; sides of body slightly constricted at junction of the fourth coxae and trochanters, and then wider posteriorly; abdomen widest at the level of the fourth area, broadly rounded behind and free tergites turned under. Dorsum strongly sclerotized; last thoracic tergite is clearly defined, being connected by the transverse furrow anteriorly to the carapace and posteriorly to the abdominal scute. Boundaries of scutal areas indistinct. Cephalothorax armed with a robust club-shaped horn at the anterior lateral margin, the horn lightly curved inward, covered densely with numerous very fine spinules excepting proximal portion which is nearly smooth. Eye tubercle prolonged horizontally into a dendroid process with four to five openings on either side. The openings are formed with small cross-bars at the middle of branches. These small cross-bars separate from each other but more or less connected to the one another and the one posterior. Lateral branches are four or five pairs, being longer anteriorly, each of which clothed with very fine spinules on the distal half. Eyes are at the base of eye tubercle, not carried forward. The projection of the eye tubercle is a little arched along the proximal portion and then curved below along the distal half (Fig. 2B). Eyes encircled by lace-like elevations. Carapace and dorsal scute have numerous transverse series of T-shaped tubercles or lacy elevations. All of these form a complicated lace-like pattern.
The main characteristic feature of scutum of Dendrolasma parula, Ortholasma Ili-yama, Shikoku, is the separate areas of body widening then wider and rounded anteriorly to scutal areas. There is a row of numerous short club-shaped projections along the posterior margin of dorsal scute. The number of projections varies from 12 to about 20, here also they are covered with very fine spinules on their distal portions and usually connected with each other by small cross-bars or threads at their distal portions. The sixth and seventh tergites have transverse rows of tubercles, some of which have cross-bars. The eighth free tergite and the corona analis with numerous scattered tubercles. The free sternites and the anal operculum likewise with tubercles, in the former tubercles being arranged more or less in two transverse series. Surface of coxae I–IV roughly tuberculatate and armed with a marginal row of tubercles which are interconnected by small cross-bars at their distal tips (Fig. 2G), tubercles fairly enlarged along the fore margin of coxa I (Fig. 2F). There is a short club-shaped
projection at the posterior distal portion of coxae I and II and at the anterior distal portion of coxa IV; that of coxae II and IV fairly enlarged; a row of prominent tubercles which are interconnected by small cross-bars arranged along the upper distal margin of all coxae (Fig. 1).

Chelicera. Hidden under the projection of eye tubercle, normal, small, first segment armed dorsally with a few very small tubercles; second segment with a short pointed, black-tipped, proximal apophysis on the dorso-medial surface (Fig. 2D), fingers armed as in Fig. 2E.

Palpus. Likewise hidden under the projection of eye tubercle, rather short, segments, particularly tibia and tarsus densely clothed with "Kugelhaare" (Fig. 2C). Trochanter somewhat elongated, with two small hair-tipped tubercles below; femur, from the side, slightly curved below; patella a little swollen beneath, widest at the middle of the length.

Legs. Elongated, all segments cylindrical, femora wider distally, particularly so I, III and IV, more or less club-shaped. Trochanters of all legs armed with numerous small or large globular tubercles, one or two located at the distal portion being prominently enlarged (Fig. 1). Femora to tibiae of all legs covered throughout with dense very fine spinules, metatarsi and tarsi only hairy. Metatarsi of all legs without a calcaneus; metatarsi of the second legs consist of several segments (from two to four segments), of which the most proximal segment being the longest without exception (Fig. 2J-K). Number of tarsal segments: I 4–5, II 4–8, III 7, IV 5–7 (see variations).

Coloration. Dorsum yellowish to dark brown, all tubercles or elevations on the dorsum pigmented; eyes encircled with black. Venter concolorous with the dorsum, in some specimens slightly paler than the dorsum. Lateral horns, process of the eye tubercle and the projections of the hind margin of the dorsal scute are pale rusty yellow, and so the chelicera and palpus, the first cheliceral segment brownish dorsally, the second segment likewise brownish proximally above, fingers of chelicera black-tipped. Legs: Trochanters dark brown to blackish except globular tubercles of pale yellow; femora likewise dark brown, somewhat paler distally, caputs whitish; patellae and tibiae dark brown, tibiae paler distally; metatarsi yellowish brown, tarsi paler, but metatarsi and tarsi of the second legs uniformly deep rusty to dark brown (Fig. 3D). Usually the body together with the process of the eye tubercle and the legs except for tarsi is covered with a layer of soil glued with cutaneous secretion.

Penis. Penis shaft 1.06 mm long, 0.07 mm wide at the middle of the length; stylus 0.07 mm long. The shape of penis is as shown in Fig. 2L–O; glans armed with three pairs of strong spines arranged in two longitudinal rows on the ventral surface and one pair of less strong spines at the distal margin below, in addition, three pairs of slender spines distally above.

**Female.** Similar in appearance with the male, but the body is slightly larger and the chelicera lacks the proximal apophysis on the second segment. Ovipositor rather short, of the form as illustrated in Fig. 2P.

**Measurements:** Body (♂, ♀ in parentheses): Total length excluding eye
Fig. 3. *Dendrolasna paruula* (Suzuki). A. Dorsal view of body, male, ×14. B. Ventral view of body, female, ×9. C. Dorsal view of body, subadult specimen, ×10. D. Dorsal view of entire body, female, ×6. E. Dorsal view of body, juvenile specimen, ×10. F. Two living animals in rearing, ×5. G. *Carex foliosissima*, in the roots of which is often found this animal.

tubercle 2.1 mm (2.4), width at widest portion 1.5 mm (1.8); length of eye tubercle 0.8 mm (0.8); length of lateral horn 0.5 mm (0.5).
Length of palpus and legs (\( \phi, \varphi \) in parentheses):

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**Variations:** The collection contains 17 males, 12 females and 17 immature specimens.

Number of tarsal segments. The tarsus I has five segments in the majority of specimens, but may have four segments. The tarsus II varies from four to eight segments and there occurs some asymmetry in this number, that is, one female has only four segments on the left and eight on the right side of the body (compare Fig. 2J with K). The tarsus III has always seven segments and this number seems to be considerably stable. The tarsus IV bears usually seven segments but may have either five or six segments.

**Distribution and habitats:** This species seems to be confined to Shikoku, Japan. Most specimens were found in the dense forest of beech (*Fagus crenata*) in higher elevations from 1,200 m to 1,500 m of Mt. Ishizuchi-yama. The region was cool and damp even in midsummer. And the specimens were collected by sifting leaf litter and roots of grasses such as *Carex foliisissima*.

**Affinity:** It is evident that this species is very closely related to *Dendrolasma mirabilis* Banks, 1894 recorded from Washington State of the United States. In fact, comparison of the Japanese species and the American *Dendrolasma mirabilis* in the Šilhavý collection revealed that both the forms have many characters in common. However, the genital morphology, in particular, the penis has not yet been examined in the American species. Therefore, more valid specific relation between the Japanese and American forms will be elucidated by future study. At any rate, it is interesting enough to note that two such remarkable dicranolasmids are restricted at present in very widely separated localities.

**ACKNOWLEDGMENTS**

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LITERATURE


