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**North Korean *Collembola*. I. The genus *Homidia* BÖRNER 1906 (*Entomobryidae*)**

[Pp. 23—40, pls I—VI, 4 text-figs]

**Północnokoreańskie *Collembola*. I. Rodzaj *Homidia* BÖRNER, 1906 (*Entomobryidae*)**

**Северно-корейские *Collembola*. I. Род *Homidia* BÖRNER 1906 (*Entomobryidae*)**

**Abstract.** The paper contains descriptions of six new species of the genus *Homidia* BÖRN. Body coloration, morphology of the labrum, shape of the manubrial thickening, some setae on the base of dens, as well as chaetotaxy of the head, labial base, coxae, tubus ventralis, and of some abdominal tergites were taken into consideration.

INTRODUCTION

This paper is the first one of a series dealing with the material collected in North Korea by the expedition of the Institute of Systematic and Experimental Zoology of the Polish Academy of Sciences, Kraków. The investigations were carried out by Doc. Dr. J. PAWŁOWSKI, Doc. Dr. J. RAZOWSKI and the author, members of the expedition, in August and September 1971 mainly in the vicinity of the town Phjǽngjang (in the town and in the provinces Phjǽng-jang-si and Phjǽngan-namdo) and in the northern part of the country in the province Janggang-do. Relatively small material was additionally collected in the province Hvanghe-namdo.

In the spelling of the Korean topographical names the rules of the international transliteration (in the paper by MROCZKOWSKI, 1972) were applied. The mentioned paper also contains particular data about the majority of the cited localities.

The entire material on which the paper is based was collected by the author. Type specimens are preserved in the collection of the Institute of Systematic and Experimental Zoology of the Polish Academy of Sciences, Kraków, with the exception of some paratypes transferred to the Zoological Institute of the Korean Academy of Sciences, Phjǒngjang.

#### ACKNOWLEDGEMENTS

I would like to express my sincere thanks to the workers of the Zoological Institute of the Korean Academy of Sciences, Phjǒngjang, and especially to Mr. KIM-JONG-SAM and Mr. KU-WAN-SON, the interpreter of the expedition, and to the members of the expedition for their help in the collecting of the material. I am also grateful to Doc. Dr. M. MROCZKOWSKI of the Zoological Institute of the Polish Academy of Sciences, Warszawa for making accessible his unpublished paper cited above.

#### SYSTEMATIC PART

#### Genus *Homidia* BÖRNER, 1906

The taxon in question was established by BÖRNER (1906) as a subgenus of the genus *Entomobrya* RONDANI, 1861, only for those species which were characterized by the presence of spines on dentes and distinct annulation of the fourth segment of the antenna. In 1929 DENIS recognized it as a distinct genus. Ten species (BÖRNER, 1906; 1909; DENIS, 1929, 1948; UCHIDA, 1943, 1954; YOSII, 1942, 1956) and six colour forms described as aberrations or varieties (BÖRNER, 1909; UCHIDA, 1943; YOSII, 1953, 1955) are known so far. It seems that at last some of these forms are distinct species. Their systematic rank, however, needs further examination.

Five species are known exclusively from Japan, the remaining ones are of wider distribution (India, China, Indo-China, Malaya). One species of the latter group, viz. *Homidia sauteri* BÖRNER, 1909 was also recorded from U. S. A. and had most probably been introduced there (CHRISTIANSEN, 1958b). Until now, no species of the genus *Homidia* BÖRN. had been recorded from the Korean Peninsula.

In the taxonomy of the genus *Homidia* BÖRN. the following characters were used: the body colouring, the number of spines on the dentes, the relative length of the antenna, and the length proportions of its segments. However, examination of the rich Korean material revealed that the number of the spines is a very inconstant feature even in adult specimens. Thus it cannot be regarded as taxonomically important. Usually the number of spines is smaller in males than in females, this possibly being because males are, as a rule, smaller



than females. The relative length of the antenna (as compared with the length of the head) is also very inconstant, but the mean relative length is characteristic of the species. The present author considers, however, that the above character has validity for a population only — not for particular specimens — and therefore it is useless in identification. The proportions of the length of the segments of the antenna, similarly as the length of the antenna itself, are very variable and their mean values are almost identical in different species. The colour pattern is a very important character. Its variability in fullgrown specimens is almost exclusively due to the degree of extension of the ground colour

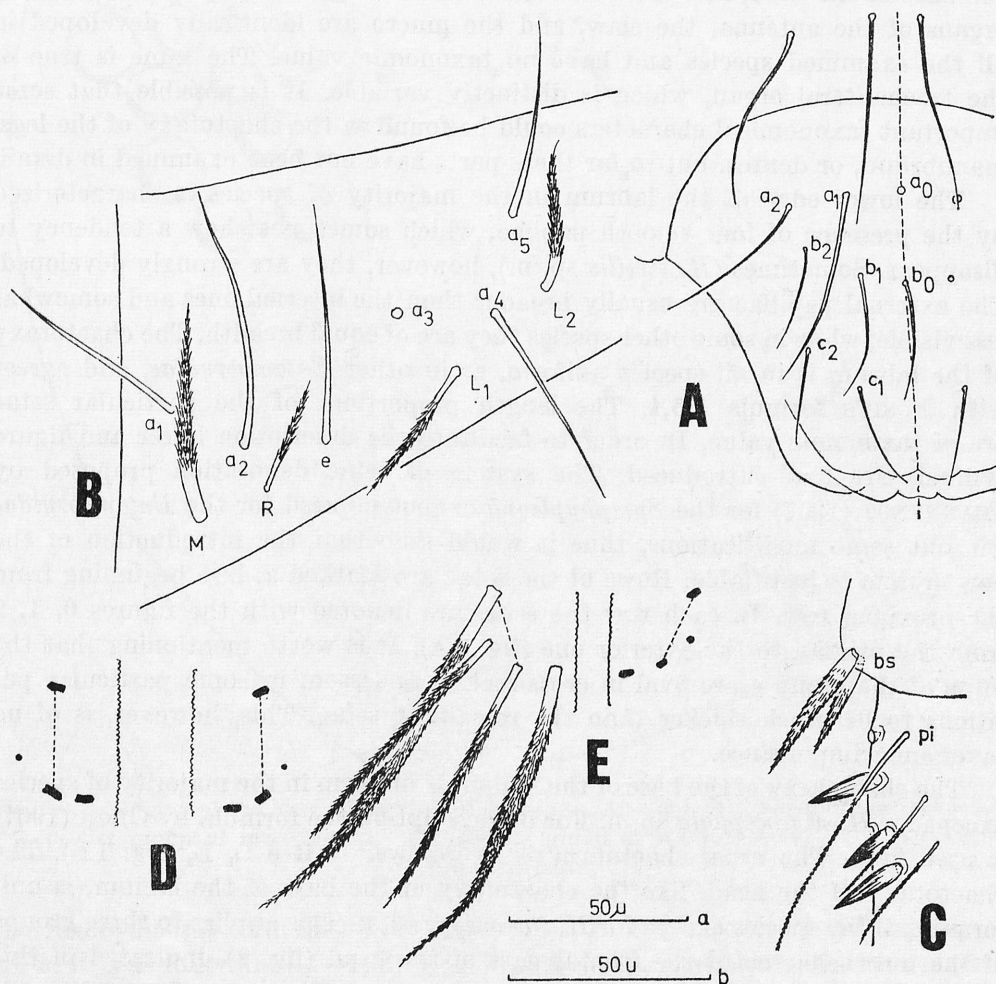


Fig. 1. A—D. *Homidia sauteri* BÖRN. A — labrum (magnification as b), B — base of labium, denomination of setae after GISIN (magnification as b), C — basal part of dens, bs — basal setae, pi — proximo-internal seta (magnification as a), D — arrangement of macrochaetae on the anterior face of tubus ventralis, an example of parallel arrangement (magnification as a); E — *H. cingula* BÖRN., arrangement of macrochaetae on the anterior face of tubus ventralis, an example of oblique arrangement (magnification as a)

(especially in *H. phjongjangica* sp. n.). Young specimens differ from the adult only in less contrasted blotches, though some other elements of the colour pattern may show here a complete reduction.

In the taxonomy of the genus *Homidia* BÖRN., as well as in the other genera of *Entomobryidae*, the following characters are the most important: the morphology of the labrum, the distribution of the macrochaetae of the head, the chaetotaxy of the base of the labium, the distribution of the macrochaetae on the coxae, some elements of the chaetotaxy of the abdomen, the chaetotaxy of the tubus ventralis, the shape of the manubrial thickening and the setae of the base of the dens, and the structure of the male genital papilla. The sensory organs of the antenna, the claw, and the mucro are identically developed in all the examined species and have no taxonomic value. The same is true of the trochanteral organ, which is distinctly variable. It is possible that some important taxonomical characters could be found in the chaetotaxy of the legs, manubrium, or dentes, but so far these parts have not been examined in detail.

The lower edge of the labrum in the majority of species is characterized by the presence of four smooth papillae, which sometimes show a tendency to disappear. Sometimes (*H. similis* sp. n.), however, they are strongly developed. The external papillae are usually broader than the internal ones and somewhat less visible, while in some other species they are of equal breadth. The chaetotaxy of the labrum is in all species uniform, as in other *Entomobryidae*, and agrees with YOSII's formula 5,5,4. The length proportions of the particular setae are of taxonomic value. In order to facilitate the description letter and figure symbols are here introduced. The system of setae denotation proposed by JEANNENOT (1957) for the *Symphyleona* cannot be used for the *Entomobryidae* without some modifications, thus it would seem that the introduction of the new system is justifiable. Rows of the setae are marked a, b, c beginning from the proximal row. In each row the setae are denoted with the figures 0, 1, 2 from the median to the exterior one (fig. 1A). It is worth mentioning that the setae of the group c are oval in cross-section and seem in some particular positions to be much thicker than the remaining setae. This, however, is of no taxonomic importance.

The chaetotaxy of the base of the labium is uniform in the majority of species except for *H. nigrocephala* sp. n. For its description the formula by GISIN (1967) is used here. The usual chaetotaxy is as follows: M R e L<sub>1</sub> L<sub>2</sub> (fig. 1B). The chaetotaxy of the head, like the chaetotaxy of the base of the labium, is uniform in all the species except for *H. flavonigra* sp. n. This applies to three groups of the macrochaetae of the frontal part of the head (fig. 2), indicated in this paper as the antennal (A), ocellar (O), and sutural (S) groups. Postocellar trichobotrium (PT) is present in all the examined species.

In the chaetotaxy of the coxae the number of the macrochaetae of the external sides is taxonomically important. This character, introduced by YOSII (1959) in the taxonomy of the genus *Lepidocyrtus* BOURLET, 1839, has not yet been applied to the other genera of the *Entomobryidae*. In the present paper

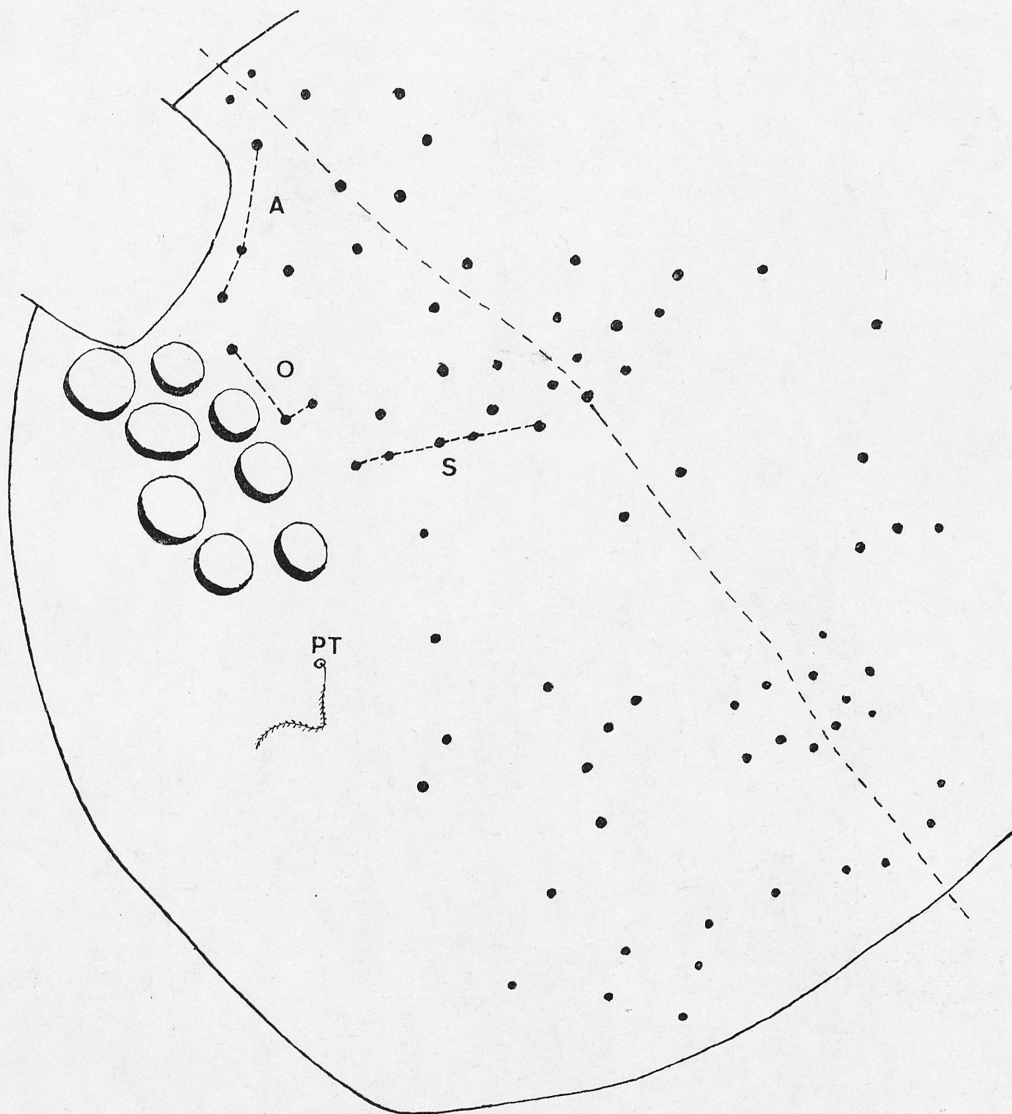
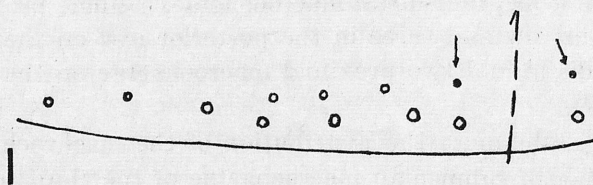
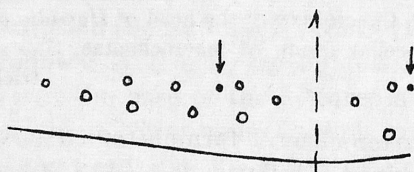
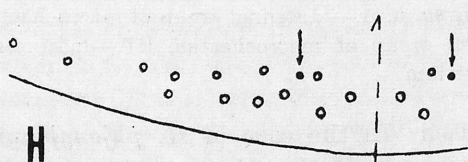
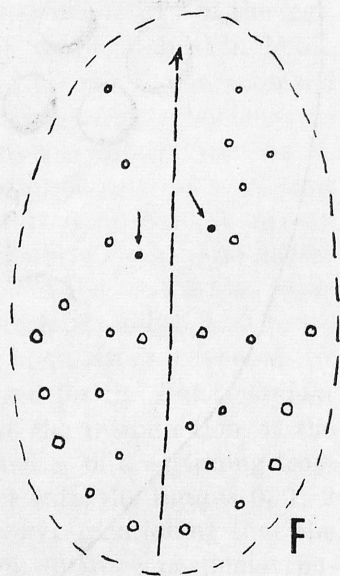
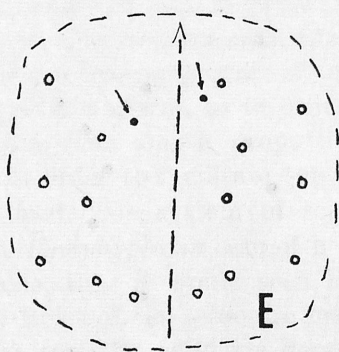
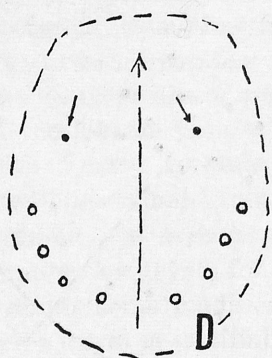
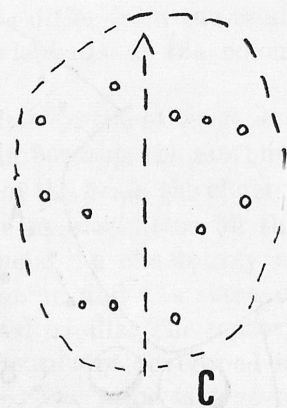
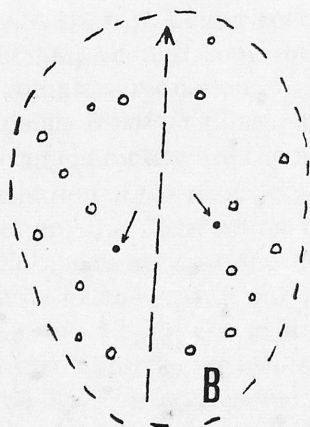
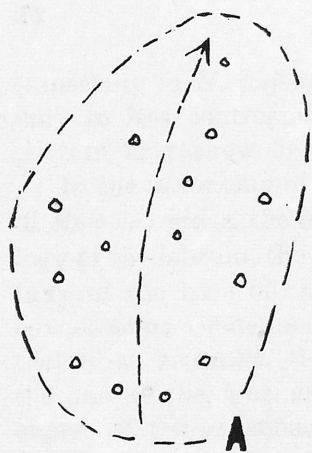


Fig. 2. Chaetotaxy of the head of *Homidia similis* sp. n. A — antennal group of macrochaetae, O — ocellar group of macrochaetae, S — sutural group of macrochaetae, PT — postocellar trichobotrium

the macrochaetal formula of coxae is used. In the case of *H. phjongjangica* sp. n. it is as follows:  $3/4+1$ ,  $3/4+2$ , which means that there are three macrochaetae on the coxa of the first leg, four distal macrochaetae, a single proximal macrochaetae in the anterior row and three in the posterior row on the coxa of the second leg, and four distal and two proximal macrochaetae on the coxa of the third leg (Pl. I, D-F).

In the chaetotaxy of the abdomen the distribution of the macrochaetae of the first tergite, the number of submedian macrochaetae of the third tergite





G  
 10 $\mu$  a  
 10 $\mu$  b

and their distribution on the posterior part of the fourth tergite are of taxonomic importance (fig. 3). Sometimes the distribution of the microchaetae of the body is of importance, but it is difficult to describe. This is true especially of the fourth tergite of the abdomen (Pl. I, G, Pl. III, D). The chaetotaxy of the body was examined in a few specimens of each species only, thus the variability cannot be assessed at present.

The tubus ventralis is characterized by the presence of 3+3 or 4+4 macrochaetae on the anterior face. Four macrochaetae (fig. 1E) were observed in *H. cingula* BÖRNER, 1906 only, but that species is not discussed in this paper. The relative position of the macrochaetae is taxonomically important. The line connecting the proximal macrochaeta and the external macrochaeta of the distal pair (as shown in fig. 1D, E) may be either parallel to the median line of the tubus ventralis (parallel arrangement of the macrochaetae) or may run at an angle with it (oblique arrangement of the macrochaetae). Single, strong, median macrochaeta and numerous smaller, bristled setae are situated on the posterior face of the tubus ventralis. Some of them are distinctly larger than the others and form the macrochaetae. The number and distribution of these are variable in the particular species and therefore of only slight taxonomic value. By contrast, the degree of setae differentiation is very useful, although difficult to describe. In the lower margin of the posterior face of the tubus ventralis several smooth setae (whose number is important) are usually present.

The shape of the manubrial part of the articulation of the manubrium with the dentes (so-called manubrial thickening) is a very important feature. The manubrial thickening in all discussed species is presented in fig. 4.

On the internal side of the dentes there appear two spine-like, ciliate setae referred to as the basal ones in this paper (fig. 1C, bs). Both the shape of the basal setae and their length are taxonomically important as was already pointed out by UCHIDA (1943). A proximal seta of the internal row of the dorsal side of the dentes, referred to as the proximo-internal seta (fig. 1C, pi), is situated near the dorsal basal seta. Its shape and length are sometimes of taxonomic value.

The male genital papilla of the papillate type (CHRISTIANSEN, 1958a) is in all examined species surrounded by 17 clavate setae. At present it is difficult to decide whether the shapes of these setae have any taxonomical importance because it depends on the position in the slide. The shape of some small, sometimes very difficult to find setae situated inside the genital papilla seemingly have some taxonomical significance.

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Fig. 3. A—F. Distribution of macrochaetae on the posterior part of fourth abdominal tergite (magnification as a). A — *Homidia phjongjangica* sp. n., B — *H. hjesanica* sp. n., C — *H. speciosa* sp. n., D — *H. chosonica* sp. n., E — *H. similis* sp. n., F — *H. flavonigra* sp. n., G—J. Distribution of macrochaetae on first abdominal tergite (magnification as b). G — *H. similis* sp. n., H — *H. hjesanica* sp. n., I — *H. flavonigra* sp. n.  
(pseudopori indicated with arrows)

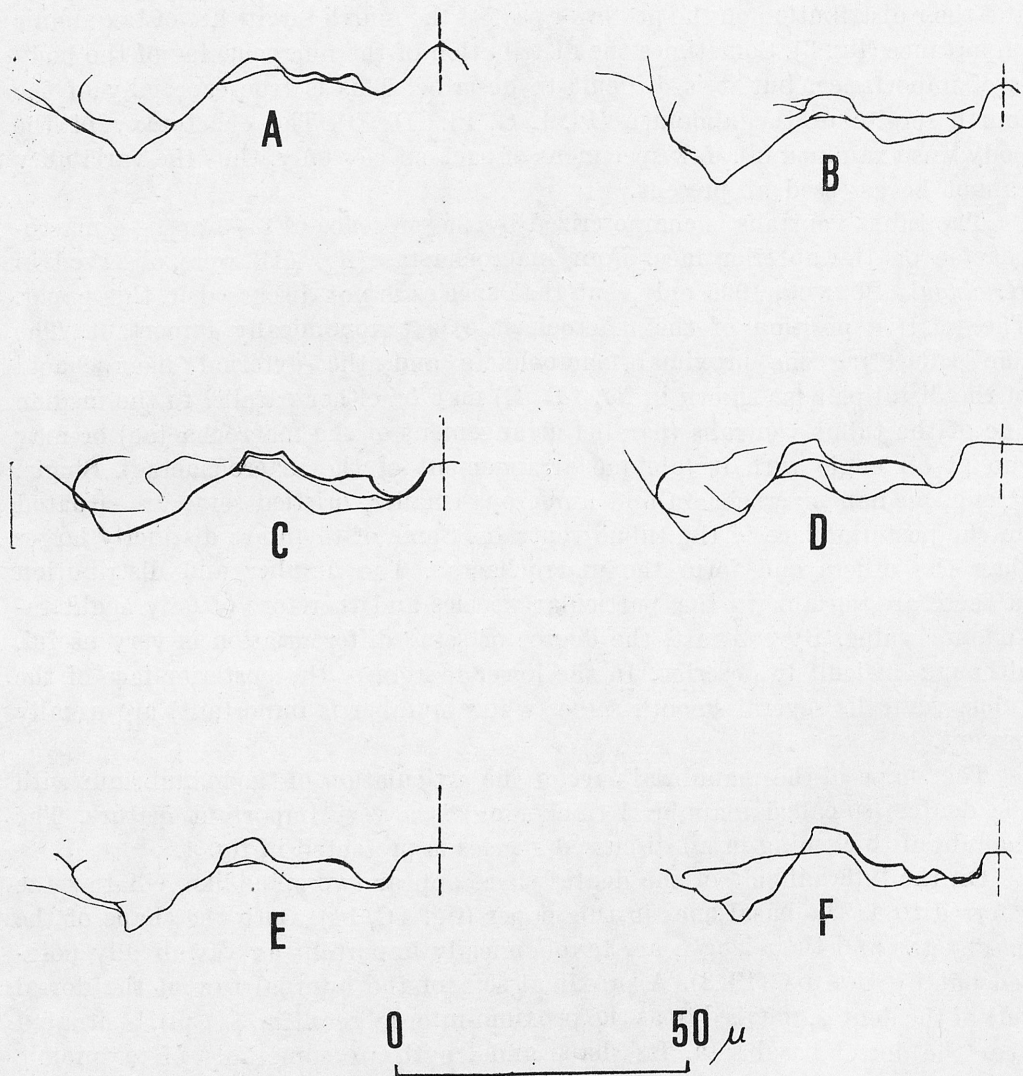


Fig. 4. Manubrial thickenings. A — *Homidia phjongjangica* sp. n., B — *H. hjesanica* sp. n., C — *H. speciosa* sp. n., D — *H. similis* sp. n., E — *H. chosonica* sp. n., F — *H. flavonigra* sp. n.

Key to the identification of the species of the genus *Homidia* BÖRNER, 1906<sup>1</sup>

1. Head dark, dark brown or black . . . . . 2
- Head pale, at most dark spotted . . . . . 5
2. Mesothorax pale dorsally, at most suffused posteriorly and laterally . . .  
    . . . . . *H. nigrocephala* UCHIDA, 1943
- Mesothorax dark dorsally, at most with small pale spots laterally . . . 3

<sup>1</sup> The colour forms are excluded because the descriptions were completely superficial.



3. Basal joint of antenna with black proximal part . . . . . *H. flavonigra* sp. n.
- Basal joint of antenna entirely pale . . . . . 4
4. Fourth abdominal tergite with dark fascia anteriorly . . . . . *H. speciosa* sp. n.
- Fourth abdominal tergite without any fascia . . . . . *H. hjesanica* sp. n.
5. Pattern in form of dark blotches on pale ground colour at least on one tergite, often on several, from second thoracic to third abdominal tergite . . . . . 6
- No pattern on those tergites . . . . . 14
6. Lateral blotches arranged in a fairly regular line terminating in dark blotch on head. . . . . *H. socia* DENIS, 1929
- Lateral blotches if present not forming a line, head at most with small, irregular blotches laterally . . . . . 7
7. Third abdominal tergite entirely dark, provided with dark blotch dorsally . . . . . 8
- Third abdominal tergite entirely pale, without pattern . . . . . *H. munda* YOSHII, 1956
8. Second abdominal tergite entirely dark . . . . . 9
- Second abdominal tergite entirely pale or at most darkening laterally . . . . . 10
9. Fourth abdominal tergite dark posteriorly, fairly small dorsal blotch on mesothorax present . . . . . *H. cingula* BÖRNER, 1906
- Fourth abdominal tergite entirely pale provided with dark, contrasting fascia at the posterior edge; mesothorax without dorsal blotch . . . . . *H. subcingula* DENIS, 1948
10. Dorsal blotch on metathorax present . . . . . 11
- No dorsal blotch on metathorax . . . . . *H. chosonica* sp. n.
11. Elongate, dark blotch connecting anterior and posterior fasciae on fourth abdominal tergite present . . . . . *H. transitoria* DENIS, 1929
- No elongate blotch on fourth abdominal tergite; anterior fascia distinctly separate from posterior fascia or absent . . . . . 12
12. Anterior fascia on fourth abdominal tergite present . . . . . 13
- No anterior fascia on fourth abdominal tergite . . . . . *H. fujiiyamai* UCHIDA, 1954
13. Four distinct papillae on lower edge of labrum. . . . . *H. similis* sp. n.
- No papillae on labrum . . . . . *H. sauteri* BÖRNER, 1909
14. Contrasting dark fascia near posterior edge of fourth abdominal tergite present . . . . . *H. phjongjangica* sp. n.
- No fascia at posterior edge of fourth abdominal tergite, at most posterior part of the body somewhat suffused . . . . . 15
15. Body colour blue . . . . . *H. amethystina* (BÖRNER, 1909)
- Body colour milk-white . . . . . *H. chrysotrix* YOSHII, 1942

*Homidia phjongjangica* sp. n.

(Figs 3A, 4A; Pl. I, A—J)

Description. Length of body 1.4—2.1 mm. Antennae very variable in length, 2.6—4.2 times longer than the head, on the average 3.2. Average length of antennal segments I:II:III:IV as 1.0:1.4:1.2:1.9. Body pattern as in Pl. I, A, B. Ground colour white to dirty violet, pattern elements dark brown to almost black. Pale muscle insertion in dark coloured specimens visible (Pl. I, B). Chaetotaxy of the head as in *H. similis* sp. n. (fig. 2): 3 antennal, 3 ocellar, and 5 sutural macrochaetae in frontal area present. Labrum (Pl. I, C) with 4 sometimes atrophied papillae, external broader and less visible than inner ones. Seta  $a_2$  shorter and thinner than  $a_1$ , but longer and thicker than  $b_2$ . Setal formula of the base of labrum M R e  $L_1$   $L_2$ , sometimes seta R duplicated or one of the L setae smooth. Macrochaetal formula of coxae 3/4+1, 3/4+2 (Pl. I, D-F). Distribution of macrochaetae on first abdominal tergite as in *H. hjesanica* sp. n. (fig. 3H), third abdominal tergite with 2+2 or 3+3 macrochaetae, distribution of macrochaetae on the posterior part of fourth abdominal tergite as in fig. 3A. Microchaetae on the body long and dense (Pl. I, G). Anterior face of tubus ventralis with 3+3 macrochaetae in parallel arrangement (Pl. I, H), posterior face with distinctly differentiated setae as in *H. hjesanica* sp. n. (Pl. II, G). Lower margin of the posterior face with 4—5 smooth setae, median seta often atrophied. Manubrial thickening as in fig. 4A. Dentes of adult with 17—38 spines, on the average 28. Basal setae of dentes long, pointed, and ciliate, proximo-internal seta thin, ciliate (Pl. I, I). Male genital area as in Pl. I, J.

Comments. *Homidia phjongjangica* sp. n. is closely related to *H. hjesanica* sp. n. and *H. speciosa* sp. n. From *H. hjesanica* sp. n. it differs in a lack of black pigmentation on the head and anterior tergites of the body, different macrochaetal formula of coxae, and in a smaller number of smooth setae on the lower margin of the posterior face of the tubus ventralis. It differs from *H. speciosa* sp. n. in the body pattern, denser arrangement of the microchaetae on the body, weaker differentiation of the setae on the posterior face of tubus ventralis, smaller number of smooth setae on its lower margin, and in some smaller details of the labrum.

*H. phjongjangica* sp. n. is also hard to distinguish from *H. socia* DENIS, 1929, especially with the specimens having no dark median line; however, the mentioned species never have dark elements of the pattern in the posterior part of the body. The relations among *H. phjongjangica* sp. n., *H. amethystina* (BÖRNER, 1909) and *H. chrysothrix* YOSHII, 1942 need further study.

Holotype: adult male from Tesŏng-san hills, prov. Phjŏngjang-si.

Paratypes. Town of Phjŏngjang: Moran-bong park, 13. VIII. 1971, in dry heap of stones (1 sp.); Botanical Garden, 15. IX. 1971, under stones (1 sp.). Prov. Phjŏngjang-si: bank of River Sunha-gang at foot of Jongak-san hills, 16. VIII. 1971, on the water in small dump (2 sp.); Jongak-san hills, 16. VIII. 1971, dry bed of a stream on southern slope, under stones (1 sp.), and 17. VIII.



1971, fresh leafy wood on the northern slope, under stones (4 sp.); Tesöng-san hills, 14. VIII. 1971, pine forest, on plants (6 sp.), and 19. IX. 1971, dry pine brushwood on the quartzite, under stones (5 sp.). Prov. Phjǒnggan-namdo: distr. Sunan, 21. VIII. 1971, southern shore of Lake Sökam-čösudži, the border between rice field and pine forest, in a heap of decaying willow leaf (60 sp.), on plants and under stones (27 sp.), stone beach near the water, under stones (1 sp.); distr. Sunčhön, 27. VIII. 1971, Džamo-san hills, gravel bank of a stream, under stones (3 sp.), on plants (1 sp.), mouldy bank of small stream, under stones (3 sp.); distr. Kangsö, 25. VIII. 1971, Lake Thesöng, the hill above pump station, on fresh grass, under stones (1 sp.), southern shore of the lake, small cut clearing in leafy bushes, on plants (2 sp.).

Derivatio nominis: *phjongjangica* — from the Town of Phjǒngjang.

***Homidia hjesanica* sp. n.**

(Figs 3B, H; 4B; Pl. II, A—J)

Description. Length of body 1.7—2.3 mm. Antennae long, 3.3—4.2 times longer than the head, on the average 3.6. Average length of antennal segments I: II: III: IV as 1.0: 1.3: 1.0: 1.7. Body pattern as in Pl. II, A. Ground colour yellow to yellow-brown. Head, mesothorax, metathorax, and sometimes first abdominal tergite much darker, usually almost black. Remaining elements of pattern also dark brown to almost black. Antennae and legs yellow. Young specimens yellow with the exception of the dark pattern in the hind part of the body. Chaetotaxy of the head as in *H. similis* sp. n. (fig. 2): 3 antennal, 3 ocellar, and 5 sutural macrochaetae present. Labrum (Pl. II, B, C) with four papillae, the inner conical, external broader and less visible. Seta  $a_2$  shorter and thinner than  $a_1$ , but longer and thicker than  $b_2$ . Setal formula of the base of labium M R e L<sub>1</sub> L<sub>2</sub>. Macrochaetal formula of coxae 3/4 + 2, 3/4 + 2 (Pl. II, D, E). Distribution of macrochaetae on first abdominal tergite as in fig. 3H, third abdominal tergite with 2 + 2 macrochaetae, distribution of macrochaetae on the posterior part of fourth abdominal tergite as in fig. 3B. Microchaetae on the body long and dense. Anterior face of tubus ventralis with 3 + 3 macrochaetae in parallel arrangement (Pl. II, F), posterior face with distinctly differentiated setae (Pl. II, G). Lower margin of posterior face with 6—7 smooth setae as in *H. speciosa* sp. n. (Pl. III, F). Manubrial thickening as in fig. 4B. Dentes of adult with 24—43 spines, on the average 34. Basal setae of dentes rather long, pointed, and ciliate, proximo-internal seta thin, ciliate (Pl. II, H). Male genital area as in Pl. II, I, J.

Comments. *Homidia hjesanica* sp. n. is very close to *H. phjongjangica* sp. n., but differs in the dark coloration of the head and first tergites of the body, in the yellow ground colour (the ground colour of the body is in *H. phjongjangica* sp. n. very variable, but never yellow) and in the different macrochaetal formula of coxae. The young specimens of *H. hjesanica* sp. n. with dark coloration on



the anterior part of body lacking may be easily mis-identified with *H. phjongjangica* sp. n., but differs in the yellow ground colour of the body.

Holotype: adult male from Džedang-jǒng hill near Hjesan.

Paratypes. Prov. Janggang-do: distr. Hjesan, 31. VIII. 1971, northern slope of Džedang-jǒng hill overgrown with larch, under stones, and on plants (6 sp.), 2. IX. 1971, the valley of Dongha-ri stream, the meadow by the stream, on fresh larch logs (19 sp.), on a decaying trunk (6 sp.); distr. Počhǒn, 1. IX. 1971, the valley of the River Karim-čhǒn ca 5 km from the village Počhǒn-bo, on low plants and on mushroom between gravel terrace and slope overgrown with bushes (10 sp.), 11. IX. 1971, the way from Hjesan to Samdžijon ca 35 km from Hjesan, the stream terrace under Posǒ-ri, under stones and pieces of timber on the grass (5 sp.); distr. Samdžijon, 5. and 6. IX. 1971, Mt Pektu-san, south-eastern slope ca 1800 m above sea level, spruce forest with larch, under pieces of timber on very rich mosses (2 sp.), 8. IX. 1971, Mt Namphode-san, southern slope ca 2100 m above sea level, mixed forest (mainly larch and birch), under stone (1 sp.).

Derivatio nominis: *hjesanica* — from the Town of Hjesan.

***Homidia speciosa* sp. n.**

(Figs 3C, 4C; Pl. III, A—H)

Description. Length of body 1.5—1.8 mm. Antennae long, 3.7—4.5 times longer than the head, on the average 3.9. Average length of antennal segments I: II: III: IV as 1.0: 1.4: 1.1: 2.1. Body pattern as in Pl. III, A. Head, mesothorax, and metathorax black. Ground colour of abdomen yellow, pattern black. Antennae and legs pale yellow. Chaetotaxy of the head as in *H. similis* sp. n. (fig. 2): 3 antennal, 3 ocellar, and 5 sutural macrochaetae present. Labrum (Pl. III, B, C) with four papillae of the same diagonal, inner a little stronger than external ones. Seta  $a_2$  only slightly shorter than  $a_1$ , nearly two times longer than  $b_2$ . Chaetotaxy formula of the base of labium M R e L<sub>1</sub> L<sub>2</sub>. Macrochaetal formula of coxae as in *H. phjongjangica* sp. n. (Pl. I, D-F), e. g. 3/4 + 1, 3/4 + 2. Distribution of macrochaetae on first abdominal tergite as in *H. similis* sp. n. (fig. 3G), third abdominal tergite with 2 + 2 macrochaetae, distribution of macrochaetae on the posterior part of fourth abdominal tergite as in fig. 3C. Microchaetae of the body very long and rather thinly distributed (Pl. III, D). Anterior face of tubus ventralis with 3 + 3 macrochaetae in parallel arrangement (Pl. III, E), posterior face with distinctly differentiated setae, its lower margin with 5—7 smooth setae (Pl. III, F). Manubrial thickening as in fig. 4C. Dentes of adult with 28—43 spines, on the average 35. Basal setae of dentes pointed, ciliate, proximo-internal seta rather thin, ciliate (Pl. III, G). Male genital area as in Pl. III, H.

Comments. *Homidia speciosa* sp. n. differs from all known species of the genus in its body pattern. Morphologically it is very close to *H. phjongjangica* sp. n., but differs in having longer and less dense microchaetae of the

body, stronger labral papillae, and in somewhat longer seta  $a_2$  on the labrum.

Holotype: adult male from Jongak-san hills, prov. Phjǽngjang-si.

Paratypes. Prov. Phjǽngjang-si: Jongak-san hills, 16. VIII. 1971, southern slope, dry bed of a stream, under stones (13 sp.), deciduous forest, in plant debris under rocks (3 sp.). Prov. Phjǽngan-namdo: distr. Sunan, 23. VIII. 1971, northern bank of Lake Sǽkam-čǽsudži, pine forest on granite, under a piece of bark (1 sp.).

Derivatio nominis: *speciosus* (lat.) — magnificent.

### *Homidia similis* sp. n.

(Figs 2, 3E, G, 4D; Pl. IV, A—I)

Description. Length of body 1.6—2.0 mm. Antennae fairly long, 2.3—3.7 times longer than the head, on the average 2.7. Average length of antennal segments I:II:III:IV as 1.0:1.4:1.2:1.9. Body pattern as in Pl. IV, A. Ground colour pale yellow, pattern dark brown. Antennae, especially two terminal segments, darker than the head. Chaetotaxy of the head as in fig. 2: 3 antennal, 3 ocellar, and 5 sutural macrochaetae on the frontal area present. Labrum (Pl. IV, B. C) with 4 very strong papillae. Seta  $a_2$  shorter and thinner than  $a_1$ , shorter than  $b_2$ . Setal formula of the base of labium M R e  $L_1$   $L_2$ . Macrochaetal formula of coxae 3/4+1, 3/4+3 (Pl. IV, D). Distribution of macrochaetae on first abdominal tergite as in fig. 3G, third abdominal tergite with 2+2 macrochaetae [(Pl. IV, E), distribution of macrochaetae on the posterior part of fourth abdominal tergite as in fig. 3E. Anterior face of tubus ventralis with 3+3 macrochaetae in parallel arrangement (Pl. IV, F). Setae on the posterior face not so distinctly differentiated as in preceding species (Pl. IV, G), its lower margin with 5 smooth setae. Manubrial thickening as in fig. 4D. Dentes of adult with 25—63 spines, on the average 41. Basal setae of dentes pointed, ciliate, the lower seta shorter and thinner than the upper. Proximo-internal seta thin, ciliate, shorter than upper basal seta (Pl. IV, H). Male genital papilla as in Pl. IV, I.

Comments. *Homidia similis* sp. n. is very similar to *H. sauteri* BÖRN. in the body pattern, but the elements of the pattern are usually lighter and less contrasting. The main character separating *H. similis* sp. n. from *H. sauteri* BÖRN. is the presence of four very strong labral papillae in the former species. These papillae are entirely lacking in *H. sauteri* BÖRN.

Holotype: adult male from the southern bank of Lake Sǽkam-čǽsudži, distr. Sunan.

Paratypes. Town of Phjǽngjang: 15. IX. 1971, Moran-bong park, under stones on the rock-shelves (3 sp.), Botanical Garden, under stones (1 sp.). Prov. Phjǽngan-namdo: distr. Sunan, 20. VIII. 1971, southern bank of Lake Sǽkam-čǽsudži, in plant debris on the sandy beach (31 sp.).

Derivatio nominis: *similis* (lat.) — similar (to *H. sauteri* BÖRN.).



*Homidia chosonica* sp. n.

(Figs 3D, 4E; Pl. V, A—G)

Description. Length of body 1.5—1.9 mm. Antennae variable, 2.6—3.9 times longer than the head. Average length of antennal segments I: II: III: IV as 1.0: 1.3: 1.2: 1.9. Body pattern as in Pl. V, A. Ground colour pale yellow, pattern brown to black, sometimes almost completely atrophied („white form”). Chaetotaxy of the head as in *H. similis* sp. n. (fig. 2): 3 antennal, 3 ocellar, and 5 sutural macrochaetae on the frontal area. Labrum (Pl. V, B) without any papillae, seta  $a_2$  shorter than  $a_1$ , approximately two times longer than  $b_2$ . Setal formula of the base of labium M R e L<sub>1</sub> L<sub>2</sub>. Macrochaetal formula of coxae 3/4+1, 3/4+2 (Pl. V, C, D). Distribution of macrochaetae on first abdominal tergite as in *H. flavonigra* sp. n. (fig. 3I), third abdominal tergite with 2+2 macrochaetae, distribution of macrochaetae on the posterior part of fourth abdominal tergite as in fig. 3D. Microchaetae on the body long and dense. Anterior face of tubus ventralis with 3+3 macrochaetae obliquely arranged (Pl. V, E), posterior face with distinctly differentiated setae (Pl. V, F). Lower margin of the posterior face with 4—5 smooth setae. Manubrial thickening as in fig. 4E. Dentes of adult with 33—44 spines (only 3 specimens examined). Basal setae of dentes long, ciliate, the upper seta thicker and longer than lower, proximo-internal seta rather short, thick, ciliate, almost spine-like (Pl. V, G). Male unknown.

Comments. The species in question, *H. sauteri* BÖRN., *H. transitoria* DENIS, *H. fujiiyamai* UCHIDA, and *H. similis* sp. n. constituted a group characterized by the presence of a large dark blotch situated dorsally of the third abdominal tergite. It differs, however, in the lack of dark pattern on the dorsal side of the metathorax. In addition to this, the new species differs from *H. sauteri* BÖRN. in having an oblique arrangement of the macrochaetae on the anterior face of the tubus ventralis and stronger differentiation of the setae of its posterior face (compare Pl. V, H). It differs from *H. transitoria* DENIS in a different pattern of the fourth abdominal tergite and from *H. similis* sp. n. in the lack of the labral papillae. The differences from the insufficiently described *H. sauteri* var. *formosana* UCHIDA 1943 and *H. fujiiyamai* UCHIDA cannot be given precisely at present.

Holotype: adult female from southern bank of Lake Sŏkam-čŏsudži, distr. Sunan.

Paratypes. Prov. Phjŏngjang-si: Tesŏng-san hills, 14. VIII. 1971, deciduous forest, under stones (1 sp.); Jongak-san hills, 16. VIII. 1971, dry bed of a stream, under stone (1 sp., white form), and 17. VIII. 1971, deciduous forest, plant debris under rocks (1 sp.). Prov. Phjŏngan-namdo: distr. Sunan, 21. VIII. 1971, southern bank of Lake Sŏkam-čŏsudži, the border between pine forest and rice field, on plants and under stones (4 sp.), in decaying willow leaf (3 sp.).

Derivatio nominis: *chosonica* — from the word Čosŏn meaning Korea in the Korean language.



*Homidia flavonigra* sp. n.

(Figs 3F, I, 4F; Pl. VI, A—K)

Description. Length of body 1.7—2.2 mm. Antennae short, 2.2—3.0 times longer than the head, on the average 2.6. Average length of antennal segments I: II: III: IV as 1.0: 1.4: 1.1: 2.1. Body pattern as in Pl. VI, A. Head, mesothorax, and almost all metathorax black, other pattern elements concolorous. Ground colour dirty yellow. Proximal part of first antennal segment black, other part of antennae yellow with darker distal parts of segments, legs yellow. Dark elements in young specimens less distinctly pigmented, usually dirty purple or the pigmentation completely atrophied. Chaetotaxy of the head as in Pl. VI, B: 4 antennal, 4 ocellar, and 6 sutural macrochaetae on the frontal area present. Labrum (Pl. VI, C) without trace of papillae, seta  $a_2$  much shorter than  $a_1$ , nearly the same length as  $b_2$ . Setal formula of the base of labium  $M_1 M_2 R_1 R_2 e L_1 L_2$  (Pl. VI, D). Macrochaetal formula of coxae  $3/4 + 2$ ,  $3/4 + 3$  (Pl. VI, E, F). Distribution of macrochaetae on first abdominal tergite as in fig. 3I, third abdominal tergite with  $3 + 3$  macrochaetae (Pl. VI, G), distribution of macrochaetae on the posterior part of fourth abdominal tergite as in fig. 3F. Microchaetae on the body long and dense. Anterior face of tubus ventralis with  $3 + 3$  macrochaetae arranged obliquely (Pl. VI, H). Posterior face with slightly differentiated setae and with 5 smooth setae on the lower margin (Pl. VI, J). Manubrial thickening as in fig. 4F. Dentes of adult with 15—31 spines, on the average 23. Basal setae of dentes ciliate, upper thicker than lower, rather blunt. Proximo-internal seta short, thick, ciliate (Pl. VI, J). Male genital area as in Pl. VI, K.

Comments. *Homidia flavonigra* sp. n. differs from all the species described in this paper in several characters, such as chaetotaxy of the head, setal formula of the base of labium, macrochaetal formula of the coxae, etc. Judging from the short antennae the new species is close to *H. nigrocephala* UCHIDA, but differs from it in the pattern of the body and shape of the basal setae of the dentes (compare UCHIDA, 1943: Pl. IV, F-I and YOSII, 1955: Abb. 6 A-E). In the general character of the pattern *H. flavonigra* sp. n. resembles also *H. munda* YOSII, but differs from it in some details of maculation, shorter antennae, and different shape of proximo-internal seta (compare YOSII, 1956: Taf. XXXIV, 217—218 and Taf. XL, 230).

Holotype: adult male from a river shore near Sinčhŏn, ca 25 km south of Sarivŏn, under decaying grass on slime (prov. Hvanghe-namdo, distr. Sarivŏn, 16. IX. 1971).

Paratypes. Town of Phjŏngjang: Botanical Garden, 15. IX. 1971, under stones (1 sp.). Prov. Phjŏngjang-si: bank of River Sunha-gang at foot of Jongak-san hills, 16. VIII. 1971 on fresh plants near the shore (3 sp.), under stones on the gravel beach (1 sp.). Prov. Phjŏnggan-namdo: distr. Sunan, 21. VIII. 1971, southern bank of Lake Sŏkam-čŏsudži, the border between pine forest and rice field, in decaying willow leaves (1 sp.); distr. Kangsŏ,

25. VIII. 1971, southern bank of Lake Thesōng, slimy shore of small dump on the marsh (1 sp.), a slope above the marsh, on plants (7 sp.); Vaudo distr. Nampho, 18. IX. 1971, the border of halophilous meadow, in a heap of decaying cane (5 sp.).

Derivatio nominis: *flavoniger* (lat.) — yellow-black.

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## STRESZCZENIE

Autor opisuje 6 nowych gatunków z rodzaju *Homidia* BÖRNER, 1906 z Koreańskiej Republiki Ludowo-Demokratycznej: *H. phjongjangica* sp. n., *H. hjesanica* sp. n., *H. speciosa* sp. n., *H. similis* sp. n., *H. chosonica* sp. n., *H. flavonigra* sp. n.

## РЕЗЮМЕ

Автор описывает 6 новых вида из рода *Homidia* BÖRNER, 1906 из Коре́йской Народно-Демократической Республики.: *H. phjongjangica* sp. n., *H. hjesanica* sp. n., *H. speciosa* sp. n., *H. similis* sp. n., *H. chosonica* sp. n., *H. flavonigra* sp. n.



PLATES

Plate I

*Homidia phjongjangica* sp. n.

- A — Habitus
- B — Hind part of the body of dark coloured specimen
- C — Labrum (magnification as c)
- D — Arrangement of macrochaetae on first coxa (magnification as a)
- E — Ditto, on second coxa (magnification as a)
- F — Ditto, on third coxa (magnification as a)
- G — Chaetotaxy of the lateral part of fourth abdominal tergite (magnification as b)
- H — Macrochaetae on the anterior face of tubus ventralis (magnification as b)
- I — Basal part of the dens (magnification as b)
- J — Male genital papilla (magnification as d)

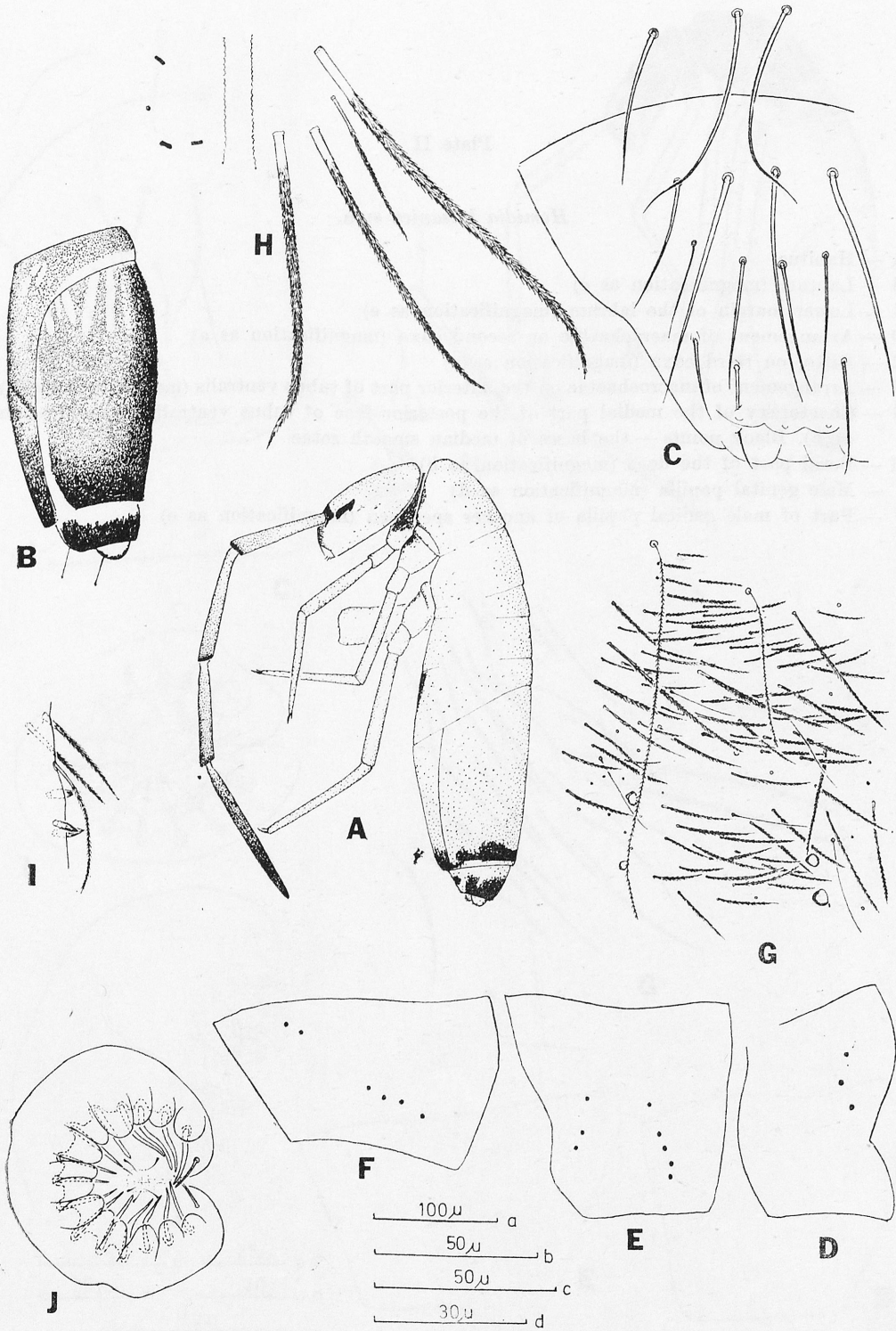




Plate II

*Homidia hjesanica* sp.n.

- A — Habitus
- B — Labrum (magnification as c)
- C — Lower margin of the labrum (magnification as e)
- D — Arrangement of macrochaetae on second coxa (magnification as a)
- E — Ditto, on third coxa (magnification as a)
- F — Arrangement of macrochaetae on the anterior part of tubus ventralis (magnification as b)
- G — Chaetotaxy of the medial part of the posterior face of tubus ventralis (magnification as b). Black points — the bases of median smooth setae
- H — Basal part of the dens (magnification as b)
- I — Male genital papilla (magnification as d)
- J — Part of male genital papilla of another specimen (magnification as e)

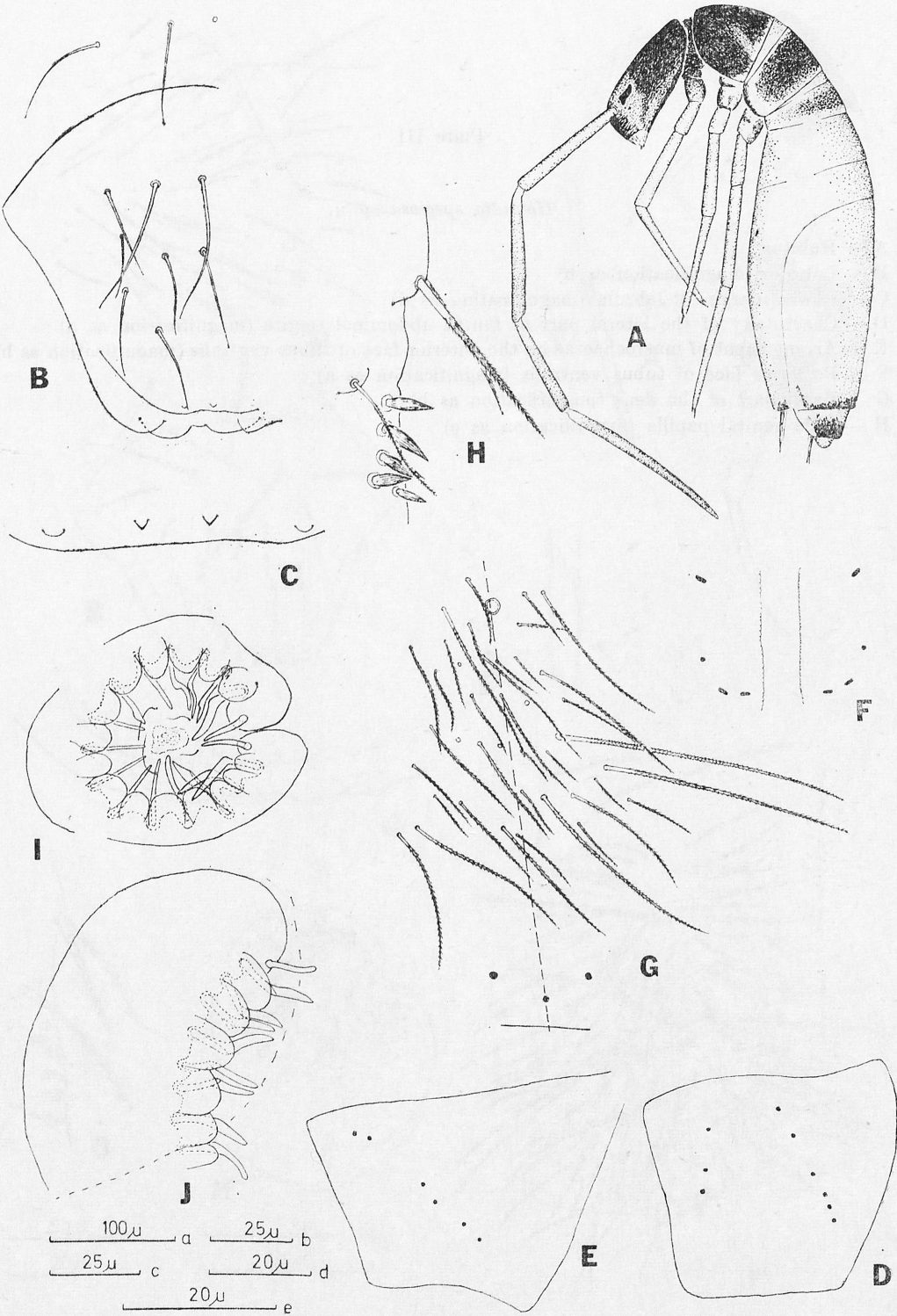
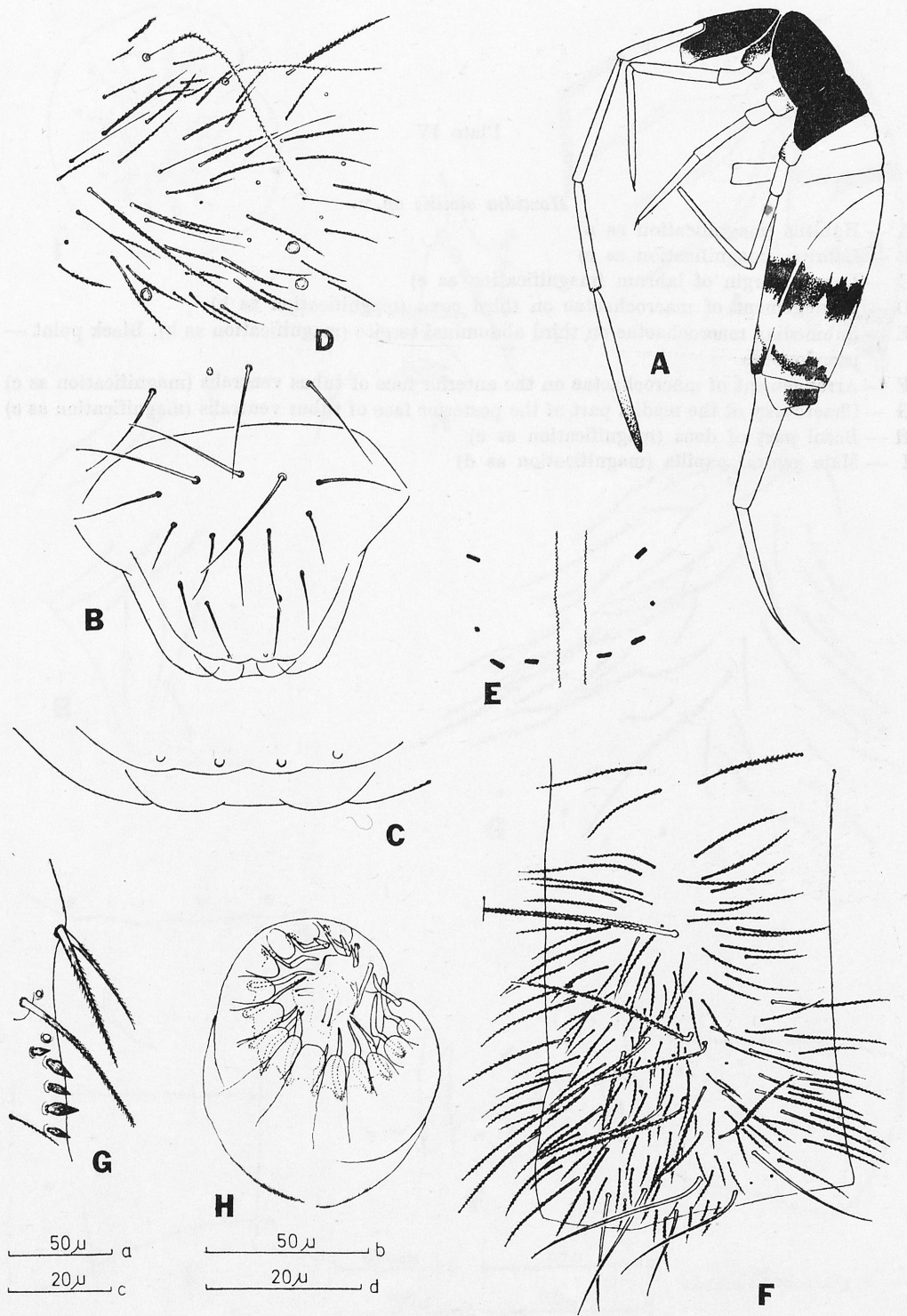


Plate III

*Homidia speciosa* sp. n.

- A — Habitus
- B — Labrum (magnification as b)
- C — Lower margin of labrum (magnification as d)
- D — Chaetotaxy of the lateral part of fourth abdominal tergite (magnification as a)
- E — Arrangement of macrochaetae on the anterior face of tubus ventralis (magnification as b)
- F — Posterior face of tubus ventralis (magnification as a)
- G — Basal part of the dens (magnification as b)
- H — Male genital papilla (magnification as c)



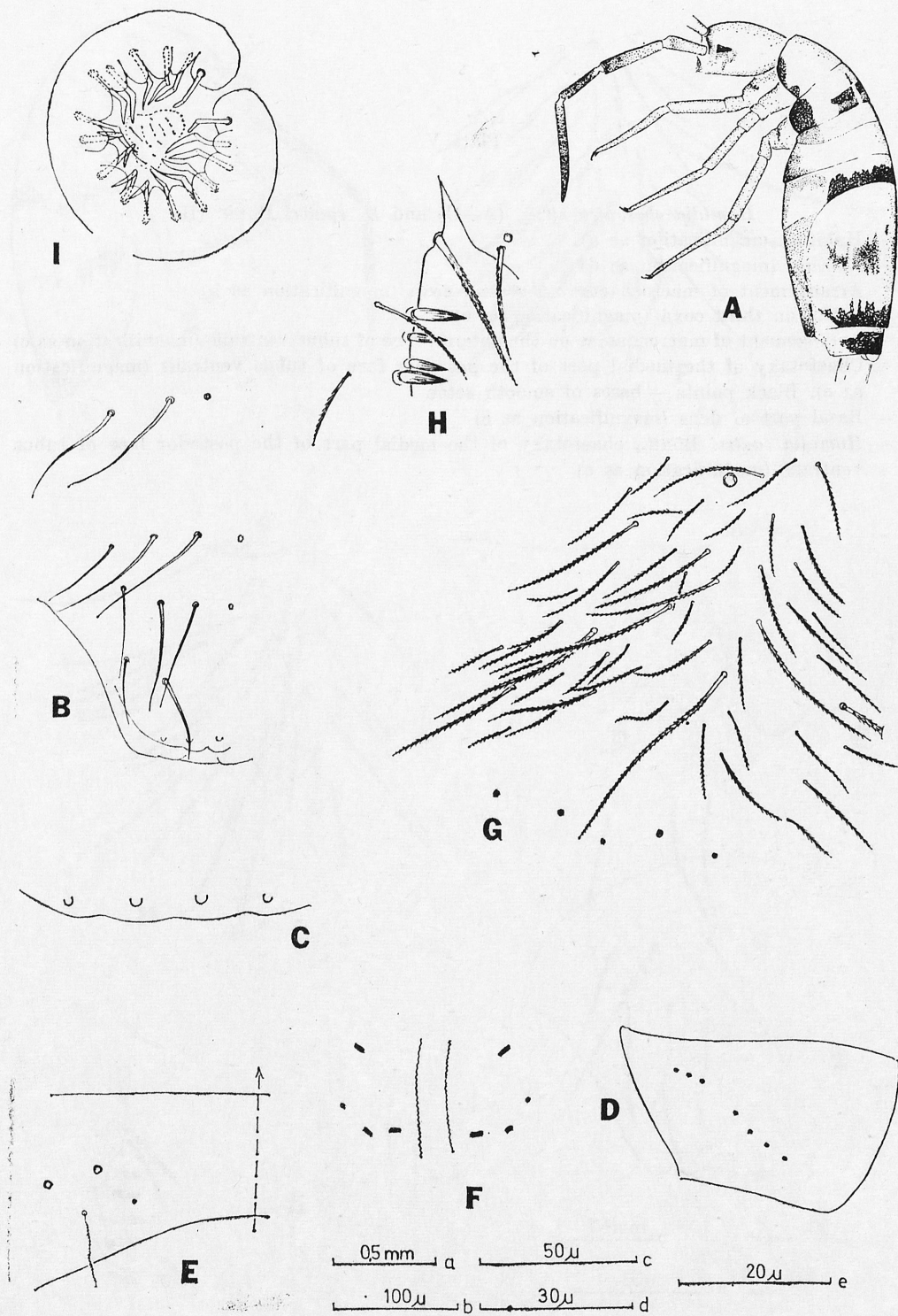


A. Szeptycki

Plate IV

*Homidia similis* sp. n.

- A — Habitus (magnification as a)
- B — Labrum (magnification as c)
- C — Lower margin of labrum (magnification as e)
- D — Arrangement of macrochaetae on third coxa (magnification as b)
- E — Submedian macrochaetae on third abdominal tergite (magnification as b). Black point — pseudoporus
- F — Arrangement of macrochaetae on the anterior face of tubus ventralis (magnification as e)
- G — Chaetotaxy of the medial part of the posterior face of tubus ventralis (magnification as e)
- H — Basal part of dens (magnification as e)
- I — Male genital papilla (magnification as d)



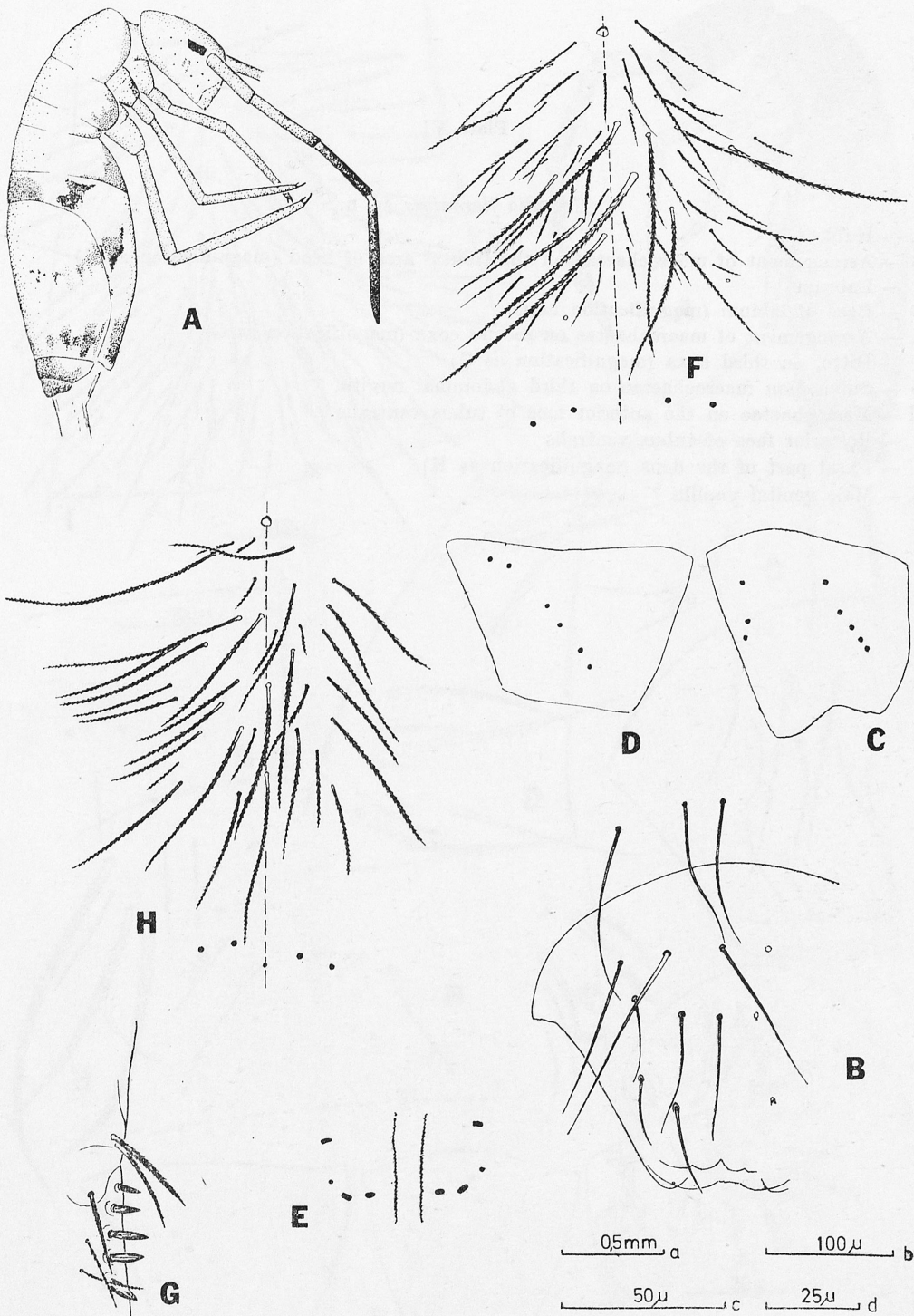
A. Szeptycki



Plate V

*Homidia chosonica* sp. n. (A—G) and *H. sauteri* BÖRN. (H)

- A — Habitus (magnification as a)
- B — Labrum (magnification as d)
- C — Arrangement of macrochaetae on second coxa (magnification as b)
- D — Ditto, on third coxa (magnification as b)
- E — Arrangement of macrochaetae on the anterior face of tubus ventralis (magnification as c)
- F — Chaetotaxy of the medial part of the posterior face of tubus ventralis (magnification as c). Black points — bases of smooth setae
- G — Basal part of dens (magnification as c)
- H — *Homidia sauteri* BÖRN., chaetotaxy of the medial part of the posterior face of tubus ventralis (magnification as c)



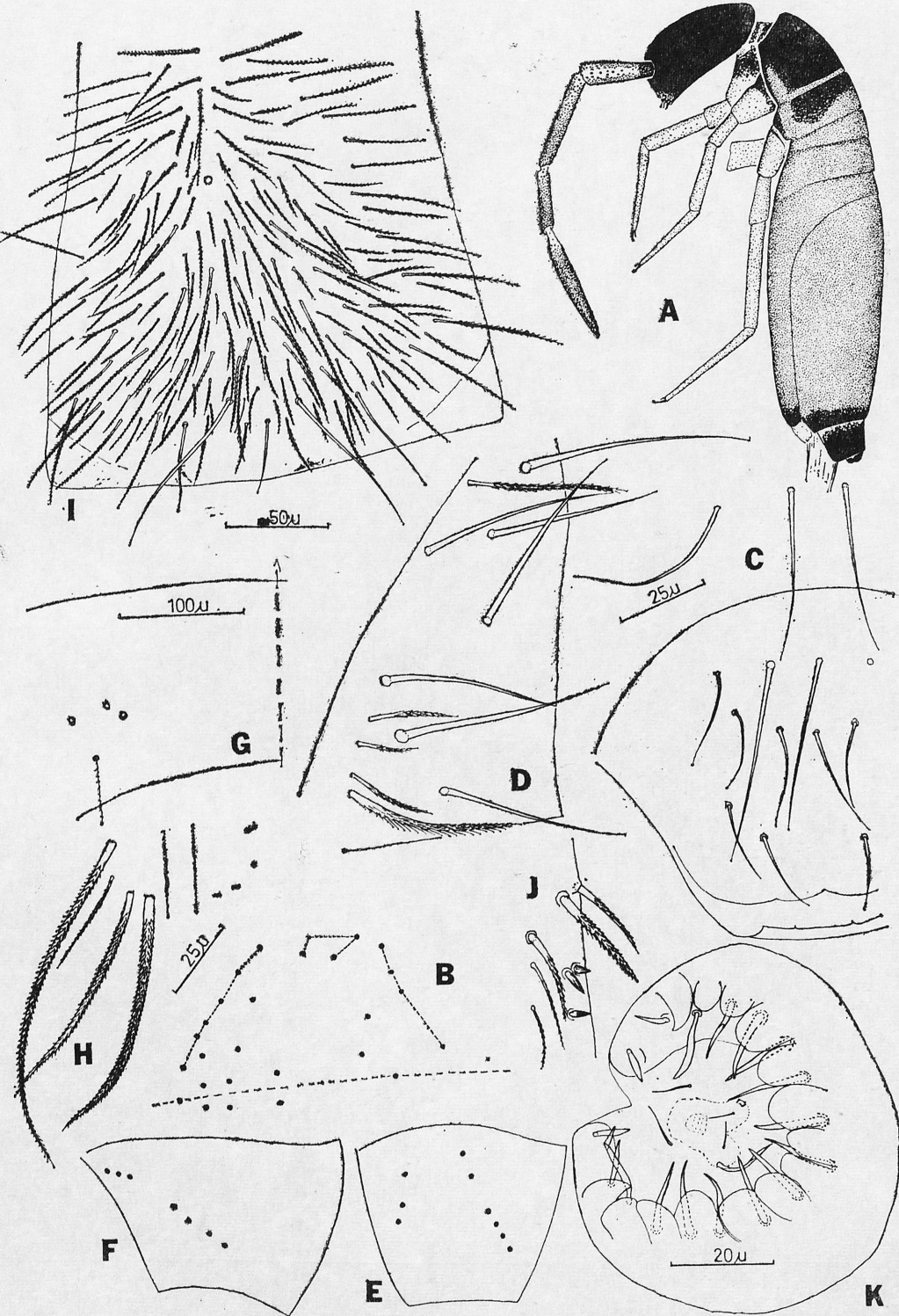
*A. Szeptyeki*

Plate VI

*Homidia flavonigra* sp. n.

- A — Habitus
- B — Arrangement of macrochaetae on the frontal area of head (magnification as G)
- C — Labrum
- D — Base of labium (magnification as C)
- E — Arrangement of macrochaetae on second coxa (magnification as G)
- F — Ditto, on third coxa (magnification as G)
- G — Submedian macrochaetae on third abdominal tergite
- H — Macrochaetae on the anterior face of tubus ventralis
- I — Posterior face of tubus ventralis
- J — Basal part of the dens (magnification as H)
- K — Male genital papilla





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