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A NEW ROTIFER *PLOESOMA PEIPSIENSE* sp. nov.  
IN LAKE PEIPSI

In the course of investigation of the seasonal samples of zooplankton taken from L. Peipsi in 1964—1966 by J. Haberman the occurrence of a taxon of *Ploesoma* (Fig. 1) which could not be identified with any known *Ploesoma* taxon — although it had several similar features with *Ploesoma truncatum* (Levander) — was revealed. The existence of the new taxon became definite when several quite typical specimens of *Ploesoma truncatum* were found which clearly differed from the new taxon.

As there is no morphological transition between the new taxon and the species *P. truncatum*, the former cannot be a form of *P. truncatum*. The coincidence of their biotopes excludes the consideration of them as subspecies. Therefore the authors are of the opinion that it is a new species which, because of its similarity with *P. truncatum*, has been overlooked by investigators. As the place of finding of the new species is L. Peipsi, we have decided to name it *Ploesoma peipsiense*. The species has been described on the basis of material fixed in formalin.

Description of the species *Ploesoma peipsiense* (♀♀). Lorica rigid, oval, noticeably narrowing distally (specimens with ovary less narrowed), its central part being widest. Frontal dorsal margin of lorica hangs over head as a wide plate without spines and with three round lobes; middle lobe directed downwards, lateral ones reaching far ahead and aside. On sides of lorica 5 clearly distinct lateral ridges with margins armed with spines. Several longitudinal ridges on dorsal part: 3 pairs of medial ridges are connected with 3 crosswise ridges. On ventral side there is a large sulcus with a big goblet-like cut on its frontal margin. On foot sides, from the margin of sulcus wing-like crosswise ridges branch off and reach powerful lateral longitudinal ridges. The whole lorica is covered with thick plaque-like papillae which become united on the ridge margins and form fine spines. Eye red. As compared with the length of lorica, its foot is relatively short and never extends over the posterior margin (even when stretched out backwards). It is usually much shorter than lorica. Foot, as usually, ringed on the basis. Its distal part is jointed and has two oblong toes. Size of lorica: total length 172 to 176, biggest width 94 to 103, length of the most distal joint of foot 20, length of toe 21 $\mu$ .

Differential diagnosis. The species *Ploesoma peipsiense* differs from all the seven species known to the authors: *P. truncatum* (Levander, 1894), *P. lenticulare* (Herrick, 1885), *P. tricanthum* (Bergendal, 1892), *P. lynceus lynceus* (Ehrenberg, 1834), *P. lynceus lenticularis* (Sudzuki, 1960), *P. lynceus rotundus* (Sudzuki, 1960), *P. murrayi* (Wul-

fert, 1961), *P. multispinata* (Wulfert, 1965) and *P. africana* (Wulfert, 1965).

The new taxon differs from the species *P. truncatum* by stronger papillae of its lorica (those of *P. truncatum* are either absent or very small), comparatively slenderer and longer lorica, the posterior margin of which always reaches farther than the backward stretched foot and by a stronger forward protrusion of lateral lobes of the head plate.

The species differs from *P. lenticulare* by the form of its lorica and placing of ridges, from *P. tricanthum* and *P. murrayi* by the absence of sharp frontal dorsal spines, from *P. africana* by the structure of the frontal margin of its lorica and the placing of ridges. The sculpture of the lorica of the new taxon is slightly similar to that of *P. multispina*, but the frontal margin and ridges of the latter species are of quite a different structure and the surface of its lorica is covered with still more spines.

Holotype is preserved as a permanent preparation (N 548-75) in Leningrad, at the Institute of Zoology of the Academy of Sciences of the U.S.S.R., while 20 paratypes are at the Võrtsjärv Limnological Station of the Institute of Zoology and Botany of the Academy of Sciences of the Estonian S.S.R. (Tartu District, Rannu).

The species *P. peipsiense* has so far been found in 9 sampling stations and 18 samples of L. Peipsi, 7 of them in the sampling station of L. Pihkva and L. Lämmijärv (see Fig. 4). The total number of female specimens found exceeds 200, among which several have been with ovary. The species was found in water column 9 to 0 m, most abundantly in the layer 3 to 0 m, from June 8 to Sept. 15 (the temperature of water being 13.4 to 20°C)\*. Most abundantly the species occurred in September (Sept. 11, 1964, Sept. 15, 1965), especially in 1965 in L. Pihkva where it could be found in all sampling stations. Especially numerous was the species in the sampling station located north-west of the Talabsk Islands. In 1964 and 1965 the species was not found in the northern part of L. Peipsi (the so-called L. Suurjärv) while it occurred in the central part of the Suurjärv and near Oudova in the June and July of 1966 (June 8 and July 18), in the year when the species was not found in L. Pihkva. Thus the species occurred in the northern part of L. Peipsi (with a comparatively cool water) in the warm year of 1966 (and was absent in too warm L. Pihkva) while in the cool years of 1964 and 1965 it found more favourable living conditions in warm L. Pihkva and was absent in cool L. Peipsi. Adult females with ovary occurred both in July and September. The occurrence of the species in certain time-limits and lake parts allows us to suggest that it is a stenothermic species living at medium temperatures. Cladocera *Limnospira frontosa*, *Bythotrephes cederstroemi*, etc., also belong to the stenothermic group of species living at medium temperatures.

Typical specimens of *Ploesoma truncatum* were found only in the sampling stations of L. Pihkva located north-west of the Talabsk Islands on May 15, 1965; the found females were with ovary. The found specimens of *P. truncatum* were very similar to those found in the vicinity of Helsinki and L. Nurmijärvi in Finland by K. Levander (1894).

The place of finding of *Ploesoma peipsiense*, L. Peipsi, is one of the largest lakes in Europe: the total area of 3566 km<sup>2</sup> and total volume of 25.21 km<sup>3</sup>. The biggest depth of the lake is 15.2, the average depth — 6.9 m. The average depth of the northern part of the lake, the so-called L. Suurjärv, is 8 and the biggest depth 12.4 m, while the depth of the

\* The exact upper limit of temperature was not recorded.

southern part of the lake, L. Pihkva, is 3 to 5 m. The lake is situated 29.78 m above the sea level (Куллус, Мерила, 1966).

As a whole, the lake is rich in oxygen: according to L. Kullus and L. Merila (1966), the average percentage of oxygen during several years has been 70 to 107 in the upper layers and 63 to 104 in the layers near the bottom. The transparency of water in the summer is 2.0 to 3.6 m, the colour of water varies from greenish-yellow to brown. pH of water fluctuates in the limits of 7.0 to 9.3, usually exceeding 8.2 in the summer. Organic matter content in the lake is rather variable: potassium permanganate consumption fluctuates between 4.8 and 15.4 mg/l O<sub>2</sub>; nitrate content in the water is 0.01 to 0.50 mg/l. There are 0.001 to 0.010 mg/l nitrites and 0.008 to 0.030 mg/l of phosphorus in the water. The average HCO<sub>3</sub> content is 125.9 mg/l. As for the type, the fresh-water L. Peipsi belongs to the group of eutrophic lakes with mesotrophic features, while the northern part of the lake — L. Suurjärv — is its most mesotrophic and L. Pihkva — its most eutrophic part. L. Lämmijärv between L. Suurjärv and L. Pihkva has dysotrophic features. Thus the species was found mainly in the most eutrophic part of the lake. It is interesting to note that *Ploesoma peipsiense* has not been found during the investigations of the zooplankton of over 300 Estonian small lakes (among them at least 42% mesotrophic and eutrophic ones) or in the big eutrophic L. Võrtsjärv. This allows us to conclude that the species is rare in our conditions or may even be endemic of L. Peipsi. Nevertheless, the latter suggestion is hardly feasible in spite of the fact that L. Peipsi has a rather peculiar, although a short history.

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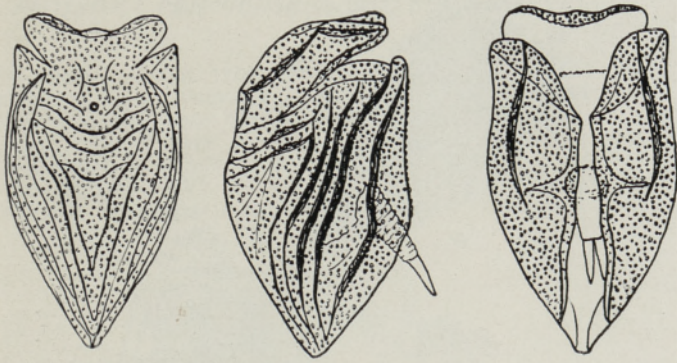


Fig. 1. *Ploesoma peipsiense* sp. nov. (adult female)

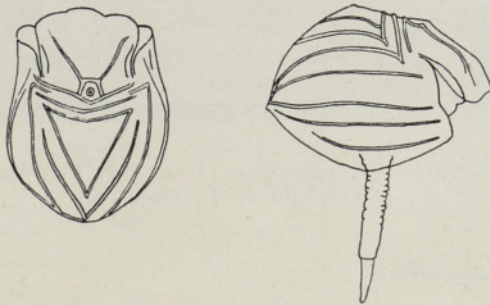


Fig. 2. *Ploesoma truncatum* (adult female)  
by K. Levander (1894).

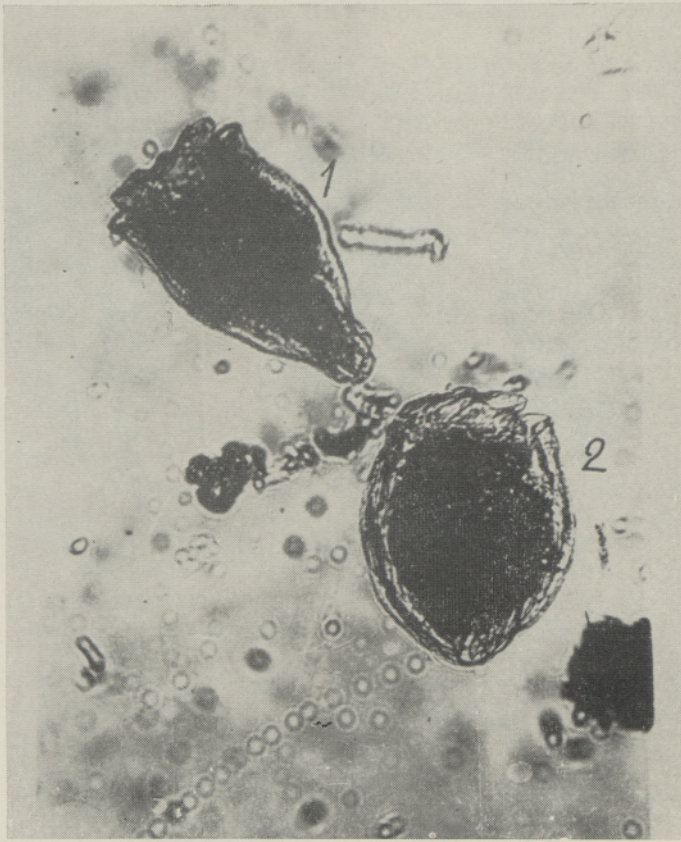


Fig. 3. *Ploesoma peipsiense* (1) and *P. truncatum* (2)  
(microphoto by A. Mäemets).



Fig. 4. Distribution of *Ploesoma peipsiense* and *P. truncatum* in L. Peipsi-Pihkva in 1964—1966 (1 — *P. peipsiense*; 2 — *P. peipsiense* and *P. truncatum*).

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UUS KERILOOM *PLOESOMA PEIPSIENSE* sp. nov. PEIPSI JÄRVES

Peipsi järve zooplanktoni uurimisel aastail 1964—1966 leiti seni tundmatu *Ploesoma* takson, mis on kõige lähedasem liigile *Ploesoma truncatum* (Levander), kuid erineb sellest eelkõige oma saledama ja piklikuma rüüga ning tugevate näsadega. Et uus takson ja *Ploesoma truncatum* esinesid koos samas proovipunktis ning nendevahelisi siirdevorme ei leitud, siis otsustati teda kirjeldada kui uut liiki — *Ploesoma peipsiense*. Liigi holotüüpi säilitatakse Leningradis NSVL TA Zooloogiainstituudis püsipreparaadina (nr. 548-75), paratüüpe ENSV TA Zooloogia ja Botaanika Instituudi Võrtsjärve Limnoloogiajaamas.

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НОВАЯ КОЛОВРАТКА *PLOESOMA PEIPSIENSE* sp. nov. В ЧУДСКОМ ОЗЕРЕ

При изучении в 1964—1966 гг. зоопланктона Чудского озера (оз. Пейпси) обнаружен незнакомый таксон *Ploesoma*. Он наиболее близок к виду *Ploesoma truncatum* (Levander) и отличается от него главным образом сильно суженной формой панциря и большими бородавками на всей его поверхности.

Одновременное сосуществование названного таксона с *Ploesoma truncatum* (относительно редок) в пробах одной и той же станции и отсутствие переходных форм между ними дают основание для описания нового вида — *Ploesoma peipsiense*.

Голотип *Ploesoma peipsiense* в виде постоянного препарата (№ 548-75) хранится в Ленинграде в Зоологическом институте АН СССР, паратипы — на Выртьсъярвской лимнологической станции Института зоологии и ботаники АН ЭССР.