

Armadillidium aelleni new species of terrestrial isopod from a cave on Malta

by

Domenico CARUSO * and **Franco FERRARA ****

With 15 figures

ABSTRACT

The Authors describe a new species of *Armadillidium* from a cave on Malta (Ghar Hasan). The new species, *Armadillidium aelleni*, is easily recognisable by the morphology of the cephalon and the very marked flattening of the body.

During fauna research carried out by one of the Authors on the Maltese archipelago, some specimens of a large *Armadillidium* with an unusually flattened and depigmented body were found in a cave on the island of Malta (Ghar Hasan). Prof. V. Aellen, Director of the Museum of Natural History in Geneva, subsequently contributed more numerous specimens from the same location, which enabled us to make a thorough study of this interesting Isopod and confirm its identity as a new species, as described below.

Armadillidium aelleni n. sp.

Specimens examined. — Malta: 2 ♂♂ (holotypus and paratypus), 3 ♀♀ (allotypi), 6 juvenes, Ghar Hasan, 10.III.1975, leg. and in coll. Caruso; 1 ♂ and 6 ♀♀ (paratypi and allotypi). Ghar Hasan, 30.IV.1976, leg. P. Strinati and V. Aellen, Museum of natural History, Geneva.

* Polycathedra Institute of Animal Biology, University of Catania, Italy.

** C.N.R. Study Centre of Tropical Fauna and Ecology, Florence, Italy.

Description. — Dimensions: ♂, 17 × 10 mm; ♀, 19 × 10.5 mm; Colour: pale back, greyish epimera. Back without tubercles; *noduli laterales* in a line, situated close to the posterior margin of pereion segments and quite far away from the edges. Flattened body, with epimera pointing outwards in a nearly horizontal direction.

Cephalon (Figs. 2, 4, 5, 8): scutellum projecting slightly above top of head and bending over it; concave in the upper part, lengthening below into a narrow, projecting

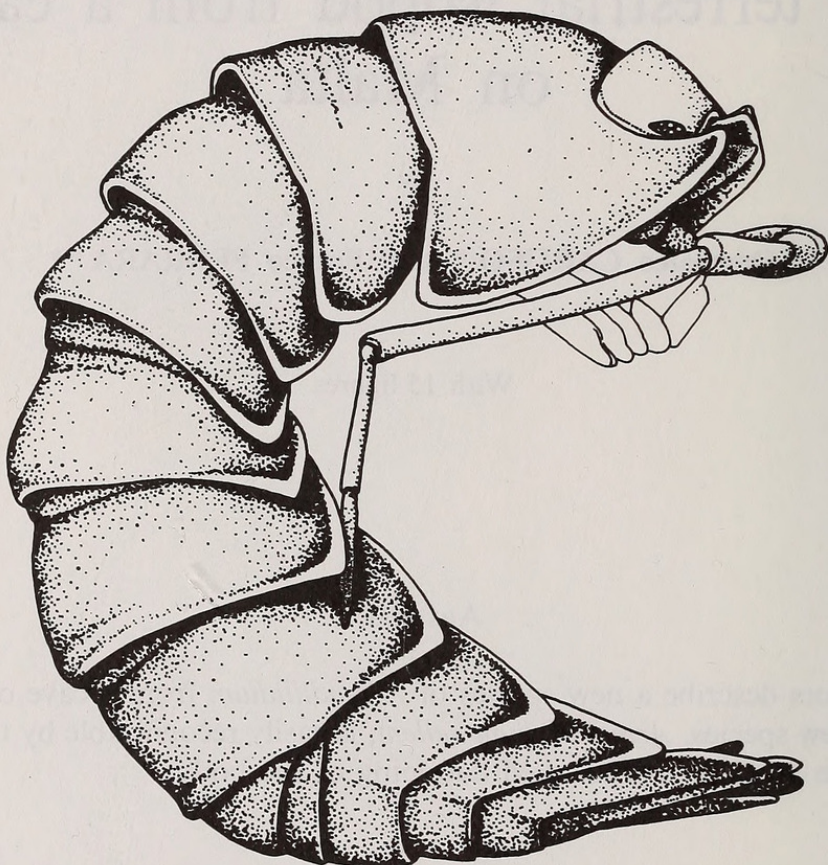


FIG. 1.

Armadillidium aelleni n. sp. — ♂ — side view.

carina; postscutellum line slightly but unmistakably raised above vertex; large, rounded antennal lobes, bent slightly forwards; antennal furrows wide and deep in their middle part, closed externally by a longitudinal ridge. Eyes with maximum of 12 ommatidia.

Pereion segment 1 with acute anterior angle, projecting forward and bent upwards; posterior margin with concavity at base of epimera, rounded angle (Figs. 1, 2).

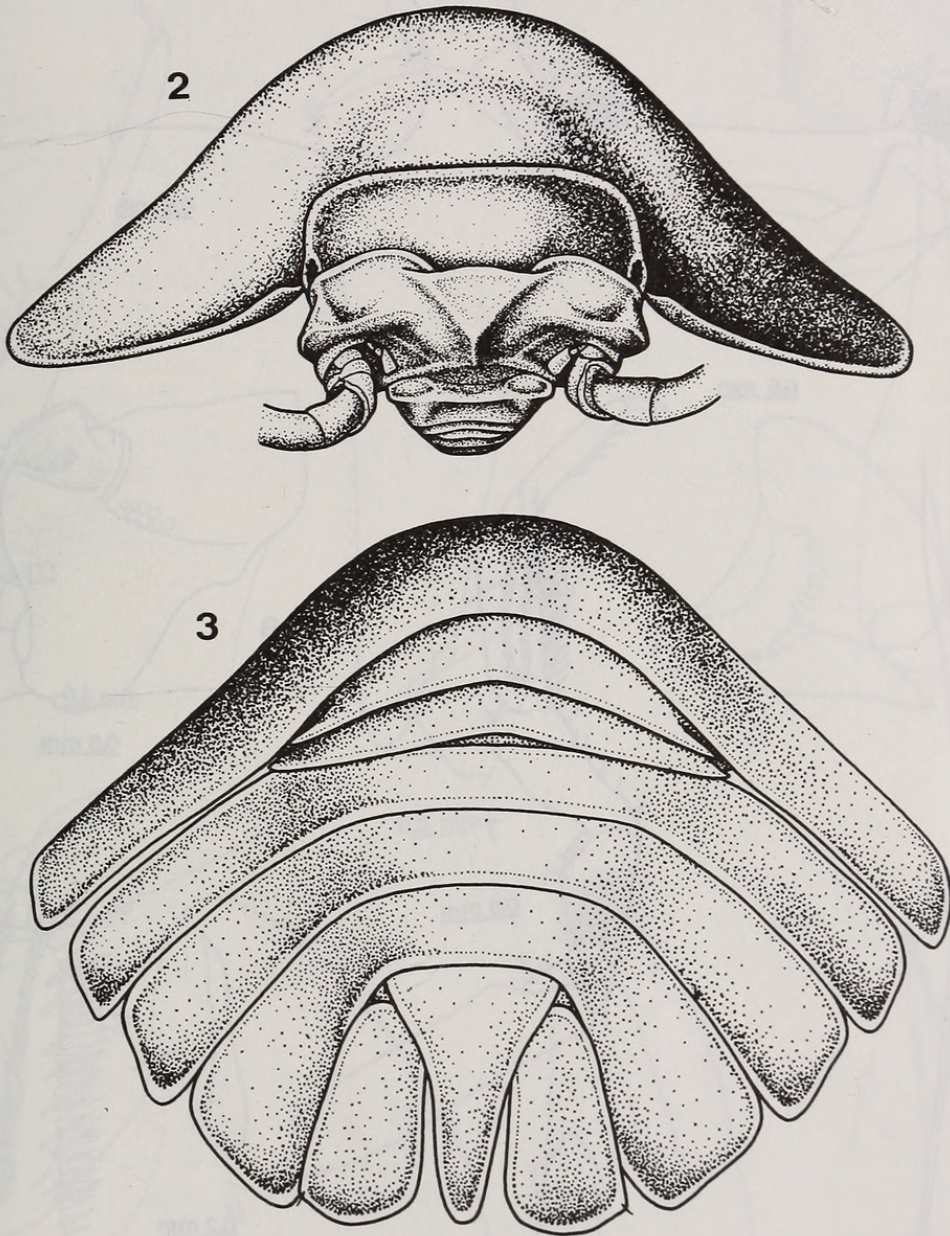
Epimera of pleon segment 5 divergent (Fig. 3).

Telson (Fig. 3): about 1.5 times longer than wide, triangular, with slightly concave sides, rounded apex.

Antennae (Figs. 1, 6): long (bent backwards, reaching beyond posterior margin of pereion segment 4) and frail, with fifth joint of peduncle longer than flagellum; first joint of flagellum longer than second. Long, frail pereopods.

Uropod: exopodite about 1.5 times longer than wide with posterior margin convex.

Male. — A brush of spines on carpus of pereiopods 1-6; pereiopod 7 ischium with slightly concave sternal margin (Figs. 10, 11). Pleopod 1 (Figs. 12-14): exopodite with inner margin regular and convex, having short spines near the apex; endopodites with

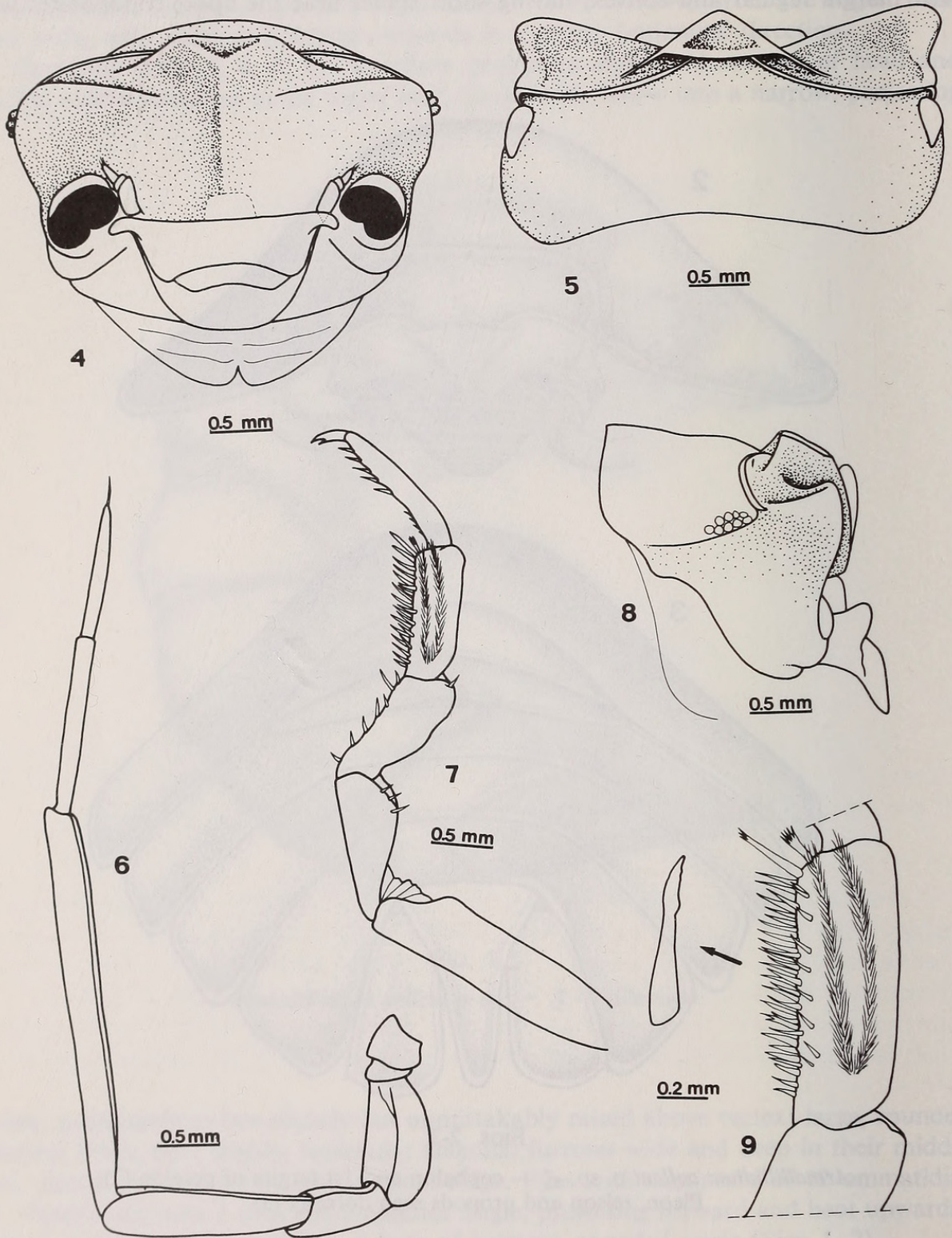


FIGS. 2-3.

Armadillidium aelleni n. sp. ♂ — cephalon and 1st tergite of pereion (2).
Pleon, telson and uropods seen dorsally (3).

distal end slightly curved outwards, apex equipped with long setae and with a row of spines on the median margin. Pleopod 2 as in Fig. 15.

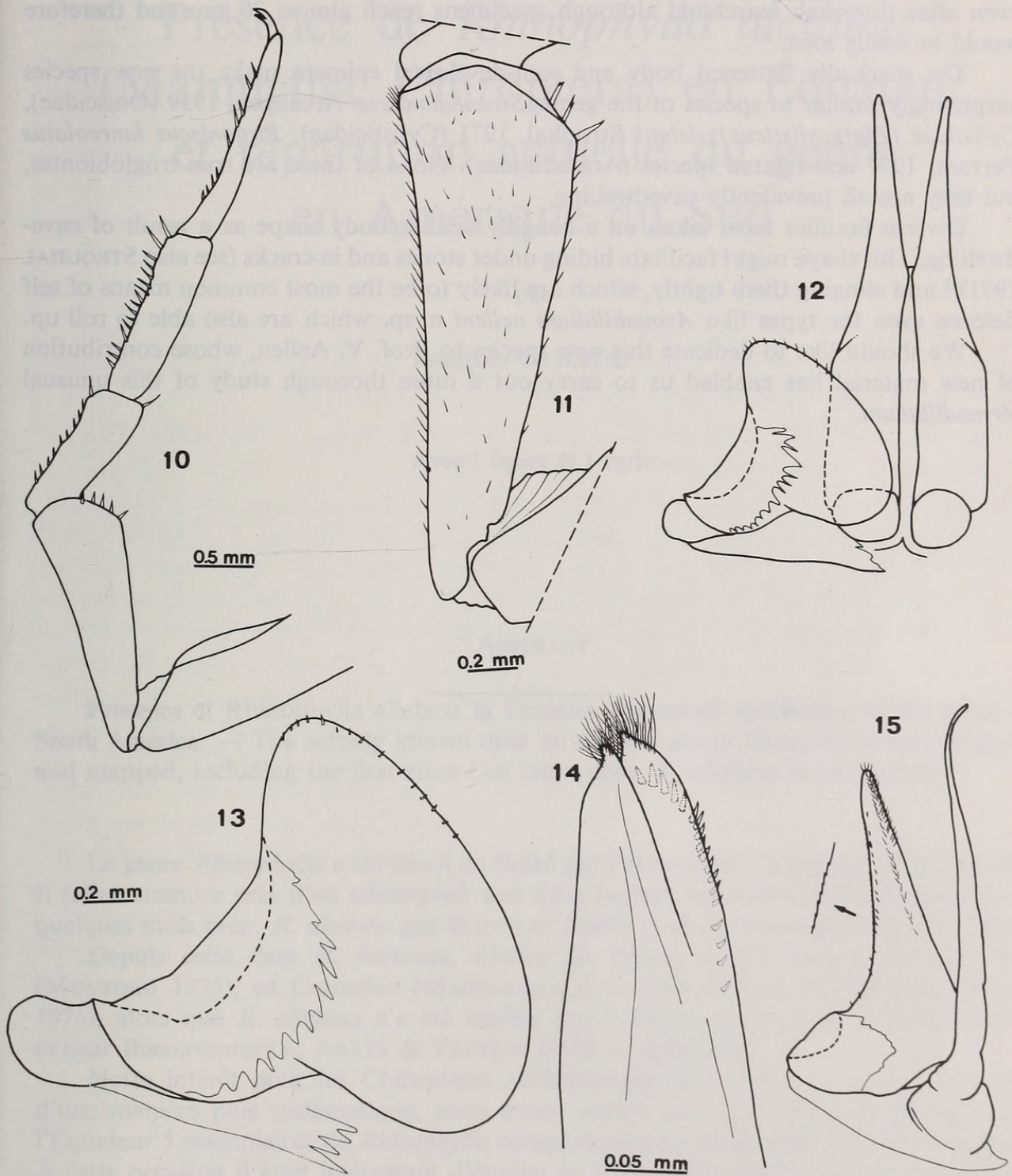
Remarks. — As far as we know, none of the species of the genus *Armadillidium* has a similar cephalic structure together with such a flattened body. For this combination, *Armadillidium aelleni* n. sp. bears some resemblance to the "Adriatic" species



FIGS. 4-9.

Armadillidium aelleni n. sp. ♂ — cephalon seen from the front (4).
 Cephalon seen dorsally (5). Right antenna (6). 1st right pereiopod (7).
 Cephalon side view (8). Carpopodite 1st right pereiopod (9).

of the *nasatum* group (*A. peraccae* Tua, *A. pallasi frontirostre* Budde-Lund, *A. scaberimum* Stein). It differs from these, however, in the form of the frontal plate, which in the case of the *nasatum* group is straight and at the most twice as wide as it is long,



FIGS. 10-15.

Armadillidium aelleni n. sp. ♂ — 7th right pereopod (10). Ischiopodite 7th right pereopod (11). Exopodite and endopodite of the 1st pleopod (12). Exopodite of the 1st right pleopod (13). Distal part of the endopodite of the 1st right pleopod (14). 2nd right pleopod (15).

while in the new species it is bent backwards over the vertex and projects over it only slightly. This is probably a case of mere convergence rather than of real affinity.

The new species shows marked adaptation to cave-dwelling in those structures typically modified in species which have become troglobious, having long, thin, frail legs, eyes with few ommatidia, and marked loss of pigmentation, all of which suggests at least a troglophile classification. No specimen has been found above ground on Malta, even after thorough searching, although specimens reach almost 20 mm and therefore would be easily seen.¹

The markedly flattened body and well-developed epimera make the new species surprisingly similar to species of the genus *Strouhaloniscus* Arcangeli, 1939 (Oniscidae), *Cylisticus* (*Platycylisticus*) *dobati* Strouhal, 1971 (Cylisticidae), *Pirgoniscus lanceolatus* Ferrara, 1977 and related species (Armadillidae). None of these are true trogliontes, but they are all prevalently cavedwelling.

Diverse families have taken on a roughly similar body shape as a result of cave-dwelling. This shape might facilitate hiding under stones and in cracks (see also STROUHAL 1971)² and clinging there tightly, which are likely to be the most common means of self defence even for types like *Armadillidium aelleni* n. sp. which are also able to roll up.

We should like to dedicate this new species to Prof. V. Aellen, whose contribution of new material has enabled us to carry out a more thorough study of this unusual *Armadillidium*.

¹ The temperature in the cave was 17° C (30.IV.1976).

² STROUHAL, H. 1971. Die Isopoda terrestria der Höhlen von Eregli am Schwarzen Meer (5. Beitrag zur Kenntnis der türkischen Isopoden). *Int. J. Speleol.* 3: 351-385, pls. 113-120.



Caruso, Domenico and Ferrara, Franco. 1982. "Armadillidium aelleni new species of terrestrial isopod from a cave on Malta." *Revue suisse de zoologie* 89, 809–814. <https://doi.org/10.5962/bhl.part.82475>.

View This Item Online: <https://www.biodiversitylibrary.org/item/128872>

DOI: <https://doi.org/10.5962/bhl.part.82475>

Permalink: <https://www.biodiversitylibrary.org/partpdf/82475>

Holding Institution

Smithsonian Libraries

Sponsored by

Biodiversity Heritage Library

Copyright & Reuse

Copyright Status: In Copyright. Digitized with the permission of the rights holder.

Rights Holder: Muséum d'histoire naturelle - Ville de Genève

License: <http://creativecommons.org/licenses/by-nc-sa/3.0/>

Rights: <https://www.biodiversitylibrary.org/permissions/>

This document was created from content at the **Biodiversity Heritage Library**, the world's largest open access digital library for biodiversity literature and archives. Visit BHL at <https://www.biodiversitylibrary.org>.