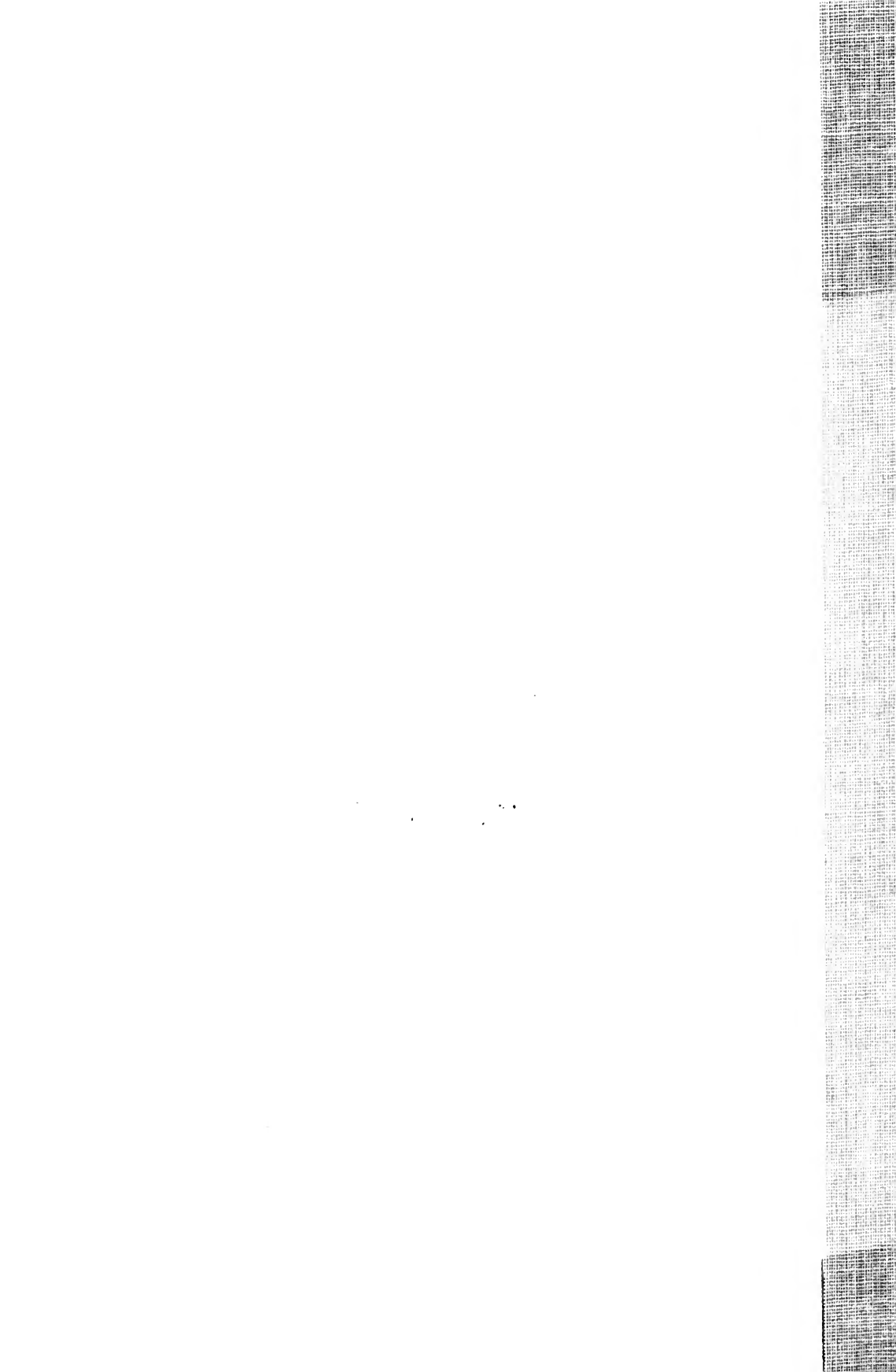


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A Pterodesmid Milliped From the Philippine Islands¹

RICHARD L. HOFFMAN
RADFORD COLLEGE, RADFORD, VIRGINIA

Species of the diplopod family Pterodesmidae inhabit a far-flung and highly discontinuous area in the tropics of West Africa, southeast Asia, and provisionally, northern South America. Proposed by O. F. Cook in 1896, the family has been generally disregarded by most later specialists, and was not formally defended in print until a few years ago (Hoffman, 1961). As was remarked at that time, however, the genera originally referred to the family, and several proposed later, do appear to comprise a group as "natural" as might be wished and distributed over a familiar geographical pattern. Whether this group is best regarded as a family, subfamily, or tribe is something that can only be decided by a future consensus among students of the Diplopoda.

My 1961 synopsis admitted nine Asiatic genera to the Pterodesmidae, these being allocated into two major groups on the basis of paranotal configuration. One category included those taxa in which the caudal edges, at least, of the paranota are prominently interrupted by deep, rounded incisions: *Trichopeltis*, *Otodesmus*, *Astrolabius*, and *Dyakryptus* referred here. The other included forms, such as *Ophrydesmus* and *Pocodesmus*, are more similar to the African pterodesmids in lacking marginal incisions. The significance of this dichotomy remains unproven since the gonopods of most of the species have not been comparatively studied, but it does seem to associate related forms. As a point of fact, *Trichopeltis* and *Otodesmus* were segregated by Cook into a separate family Otodesmidae.

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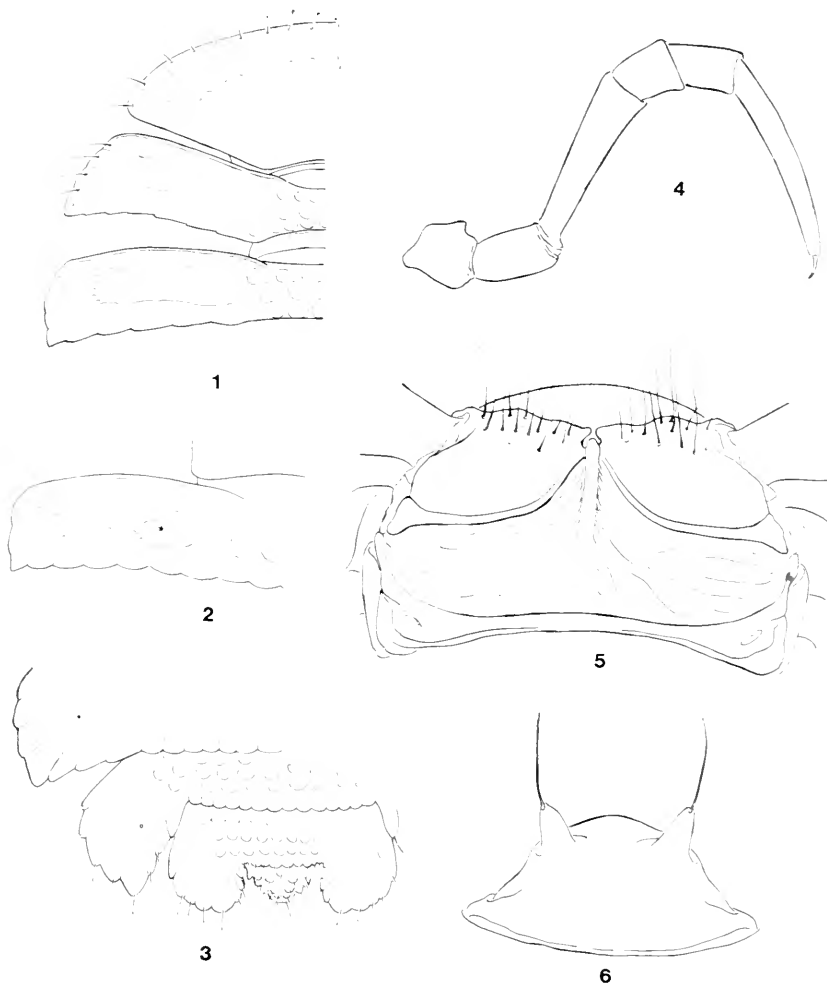
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FIGS. 1-6. *Ophrydesmus exilis*. 1. Left side of collum and segments 2 and 3. 2. Left paranotum of segment 10. 3. Left side of segments 17-20. 4. Leg from midbody segment. 5. Sternum and coxae of 2nd pair of legs, oral aspect. 6. Hypoproct. Figures drawn to different scales.

Clearly, much revisionary work must precede a good arrangement of the Asiatic forms.

From the standpoint of distribution, pterodesmids occur in Ceylon, Assam, Burma, Malaya, Sumatra, western Java, New Guinea (? introduced), and Borneo. Peripheral areas chiefly have only one species (Ceylon, Borneo); several genera and species are re-

corded however from Sumatra. It is a matter of considerable interest to extend the known range of the family into the Philippine Islands, the more so since the newly-discovered representative there is obviously much more closely related to species of Java and Sumatra than it is to the sole Borneo form.

During the recent process of sorting through large collections of Philippine diplopods sent to me for identification by Dr. John Kethley of Field Museum, I noticed the unmistakable outline of a large pterodesmid among several dozen platyrhacids collected on Palawan Island. This specimen, extricated at once from its jarmates, regrettably proved to be a female and thus not referable to a genus with absolute confidence. That the species is undescribed there can be no doubt, and in virtually all peripheral characters it is very close, if indeed not congeneric, with the various species of *Ophrydesmus* recorded from Java and Sumatra, and known also from Malaya (unpublished data).

Although the proposal of new names on the basis of female specimens only is not always recommended, the Palawan pterodesmid appears likely to be a distinctive member of a limited fauna, and worthy of nomenclatorial recognition in order to establish the zoogeographic information. The species is tentatively referred to *Ophrydesmus*, with the realization that discovery of males may render such an allocation entirely illusory.

***Ophrydesmus exilis*, new species. Figures 1-6.**

Diagnosis.—A moderately large Asiatic pterodesmid with a high W/L ratio of 30 per cent; the basal antennomeres twice as long as broad; the podosterna virtually divided into bilateral halves by the extremely deep longitudinal groove; and shift in position of the ozopores from anterior to posterior segments.

Holotype.—Adult female, length 23.0 mm., greatest width 6.7 mm., W/L ratio 30 per cent. Widths of selected segments as follows:

segment 1—4.5 mm.	segment 10—6.7 mm.
2—5.6 mm.	12—6.6 mm.
4—6.6 mm.	14—6.6 mm.
6—6.6 mm.	16—6.4 mm.
8—6.7 mm.	18—4.3 mm.

Color uniformly medium brown, underparts paler.

Head proportionately rather small, 2.3 mm. in width across genae, moderately convex, the surface very finely granular, without special ornamentation; epicranial groove indistinct; genae prominently convex, narrow, laterally margined; frons with an indistinct median convexity; interantennal isthmus relatively broad (0.7

mm.), its ratio to antennal length 33 per cent. Labral area prolonged ventrad, its surface elevated above adjoining head surfaces and polished, labral setae 4-4, clypeal setae 2-2. Edges of genae with numerous slender macrosetae.

Antennae set slightly below middle of face, relatively long (2.2 mm.) and slender, especially the basalmost articles, of which the 2nd and 3rd are more than twice as long as broad, 4th and 5th about equal in these dimensions. Antennae geniculate between articles 1 and 2 and between 3 and 4, article 2 slightly bent near its base. Article 6 smaller than 5, subconical in shape, with four small terminal sensory cones. Articles 5 and 6 with large and conspicuous sensory areas on the outer surface near the ends, composed of dense fields of short hairlike sensillae.

Collum (fig. 1) much broader than head, which it completely conceals in dorsal aspect, and nearly flat, only the posterior half of the median region slightly elevated and indistinctly tuberculate; periphery flabellate, divided into 22 elongate polygonal areas, each with a conspicuous submarginal seta. Lateral ends subacutely produced, anterior edge evenly arcuate.

Body segments generally similar in structure, differing chiefly in width and form of the paranota, these broad and flat, set fairly high on body and only slightly depressed; anterior margins smooth and nearly straight, their scapulorae high and prominent. Lateral marginal areas normally five, each with a submarginal dorsal seta, the 5th area forming posterior paranotal corner, which is basically rectangular back to posterior third of body where paranota become inclined caudally and increasingly produced. Mid-dorsal area of segments 2-5 with three transverse series of low rounded tubercles, segments 6-19 with four such series, of which those of the two middle rows are distinctly largest, those of the posterior row smallest and flattest; on most midbody segments a deep conspicuous transverse groove separates the 2nd and 3rd series.

Paranota of segments 18 and 19 project caudally (fig. 3), those of segment 19 in the form of broad obtuse lobes which enclose the epiproct. Latter small, subtriangular in outline, with four transverse series of setiferous tubercles. Paraprocts large, flattened, vertically striate, ventral setiferous tubercle nearly in contact with median elevated rim, dorsal seta located on the median rim at its upper corner. Hypoproct (fig. 6) with enlarged paramedian tubercles and a low indistinct median projection.

Prozona and metazona about equal in length and diameter, separated by a broad, prominent stricture, the front edge of which is formed by the overhanging posterior edge of the prozona; stricture continuous around body, becoming somewhat wider in front of anterior coxal socket. Surface of prozona finely shagreened dorsally, becoming very finely tuberculate ventrally, surface of metazona smooth, largely lacking microtubercles and incrustation of dirt. Ozopores tiny, with normal distribution, near front end of body located near middle of paranota near the base (fig. 2), on the caudalmost segments the pores migrate more laterally to take a position near base of the 5th lateral area. Limbus distinct, consisting of closely-set unmodified setiform projections.

Segment 19 without legs, but with a pair of indistinct, low, para-median ventral ridges. Legs of midbody segments set upon prominently elevated podosterna, these evenly divided into quarters by narrow grooves of which the transverse groove is moderate in depth, the longitudinal more profound and extending down



FIG. 7. Approximate distribution of the genus *Ophrydesmus*. Spot on Palawan Island represents the type locality for *O. exilis*.

nearly to level of stricture, sharply dividing sternal region into paramedian halves; surface of sterna smooth, set with long setae, not produced subcoxally.

Legs relatively long and slender (fig. 4), distal half of tarsi visible beyond paracymbria when seen in dorsal aspect. Coxa virtually glabrous, other podomeres becoming increasingly setose; prefemora slightly enlarged and projecting ventrally; tarsal claw small, slender, slightly curved. Lengths of podomeres: $6 > 3 > 2 > 5 = 4 = 1$.

Sides of segments granular, without other modification aside a fine vertical submarginal posterior ridge. Stigmata small, suboval, the anterior stigma with elevated rims, located in the stricture in front of dorsal coxal condyle; posterior stigma small, without distinct rims, set in the triangular space between upper ends of coxae; dorsal coxal condyles prominent and projecting outwards.

Sternum of 2nd pair of legs (fig. 5) transversely subquadrate, loosely attached to pleural areas of 3rd segment, with prominent median crest on the anterior side extending up between median bases of coxae; stigmata visible at outer basal corners of sternum. Sympleuron of 3rd segment produced into a thin semicircular flange behind bases of 2nd legs.

Holotype.—Adult female (Field Mus.), from the south slope of Mount Balabag, 4,200 ft., Mantalingajan Range, Palawan Island; F. G. Werner leg., May 10–17, 1947.

Remarks.—So far *Ophrydesmus* is known only from a handful of species, chiefly described by Cook in 1896 from Javan material. Three taxa first described by Pocock (1894) in *Cryptodesmus* and later referred by Attems to *Phenacoporus* must be added, following Jeekel's (1955) observation that *Phenacoporus* is a junior synonym of *Ophrydesmus*. Two of Pocock's species were from Java, and one of them (*weberi*) appears to be a senior synonym of Cook's *O. gede*; the status of the other (*concolor*) cannot be ascertained without examination of the type specimen. The third name (*sumatranus*) was based upon a Sumatran species which is almost certainly referable to *Ophrydesmus*, as are two others from the same island named by Silvestri in 1895.

A species almost certainly misidentified as "*Phenacoporus weberi*" was recorded from Johore State, Malaya, by Wang and Tang (1965), and the same authors described as new a "*Phenacoporus kedahensis*" from Singapore. Therefore, at least two taxa of ophrydesmids are known from the Malay Peninsula, both of them possibly referable to *Ophrydesmus* itself. The distribution map (fig. 7) shows the approximate general distribution of the genus on the basis of the foregoing records.

O. exilis agrees closely with the Malaysian forms in external characters, and even if the gonopods of the species are found to be generically different, there can still be no doubt that *exilis* is to be placed in this general section of the family. Even though the smaller millipeds of Borneo have not been carefully sought so far, it is surprising that heretofore only one pterodesmid—*Dyakryptus grandis* from Mount Kinabalu—has been taken on that large island. The discovery of an *Ophrydesmus* type on Palawan encourages the expectation that eventually others will be found also on Borneo, an obvious link in the presently discontinuous area occupied by the group.

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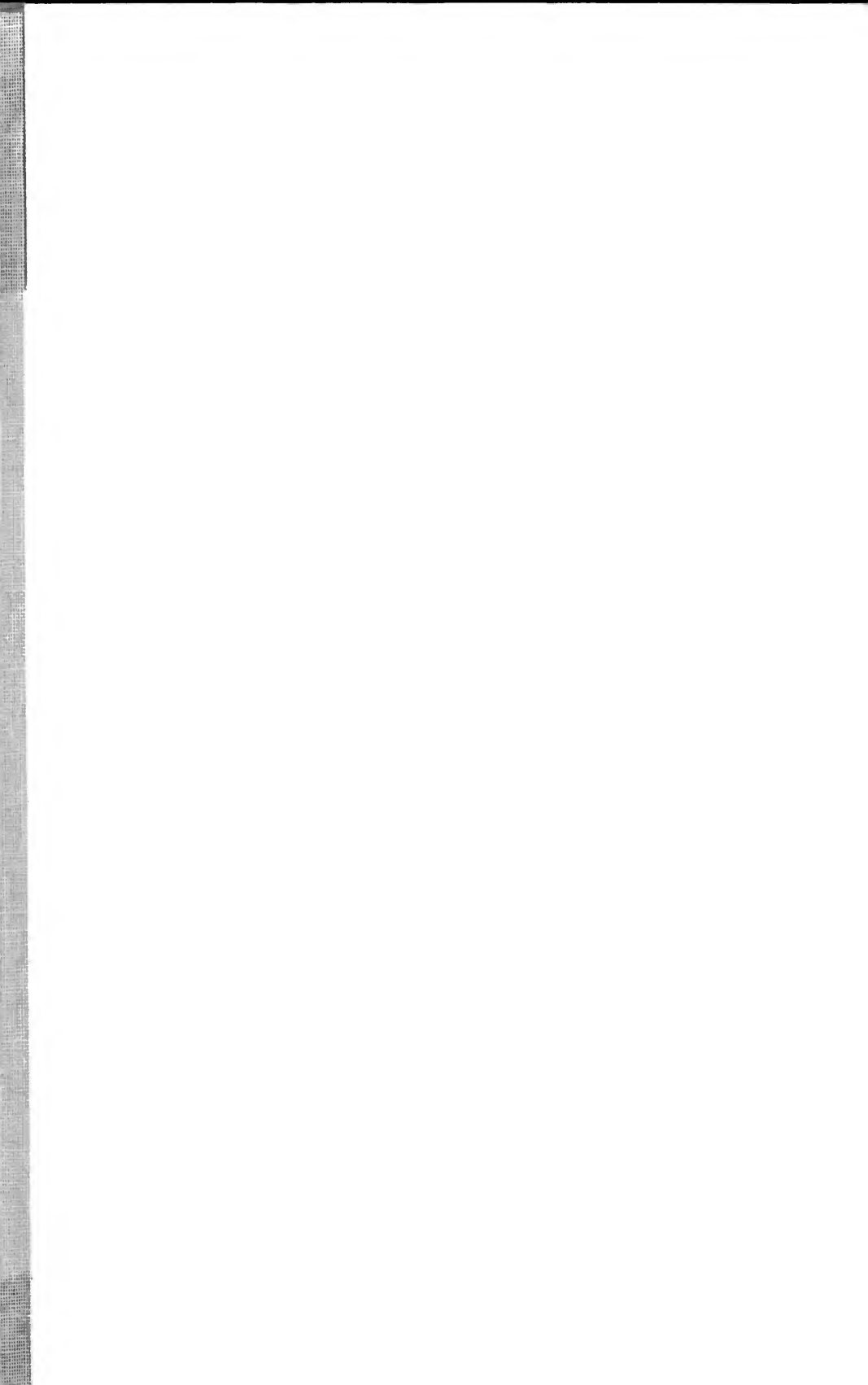
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