

Redescription of *Paraugaptilus mozambicus* Gaudy (Crustacea, Copepoda: Arietellidae)

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A re-description of the female of *Paraugaptilus mozambicus* Gaudy, 1965 and description of the true male of this species are given. The male assigned to *P. mozambicus* Gaudy in the original description belongs to another, undescribed species. The similarities and distinctions of the closely related species *P. mozambicus*, *P. bermudensis* and *P. meridionalis* are discussed.

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Introduction

Gaudy (1965) described *P. mozambicus* briefly from the area off the south-western coast of Madagascar. There were no further records of this species. *P. mozambicus* is re-described below from specimens collected in the type locality.

The following abbreviations are used : CTh, cephalothorax; Th1-Th5, first-fifth thoracic segments; Abd, abdomen; F, furca; A1, antennule; A2, antenna; Md, mandible; Mx1, maxillule; Mx2, maxilla; Mxp, maxilliped; P1-P5, legs of first-fifth pairs; Re, exopodite; Ri, endopodite; Re1-Re3, Ri1-Ri3, first-third segments of Re and Ri.

Paraugaptilus mozambicus Gaudy, 1965 (Figs 1-24)

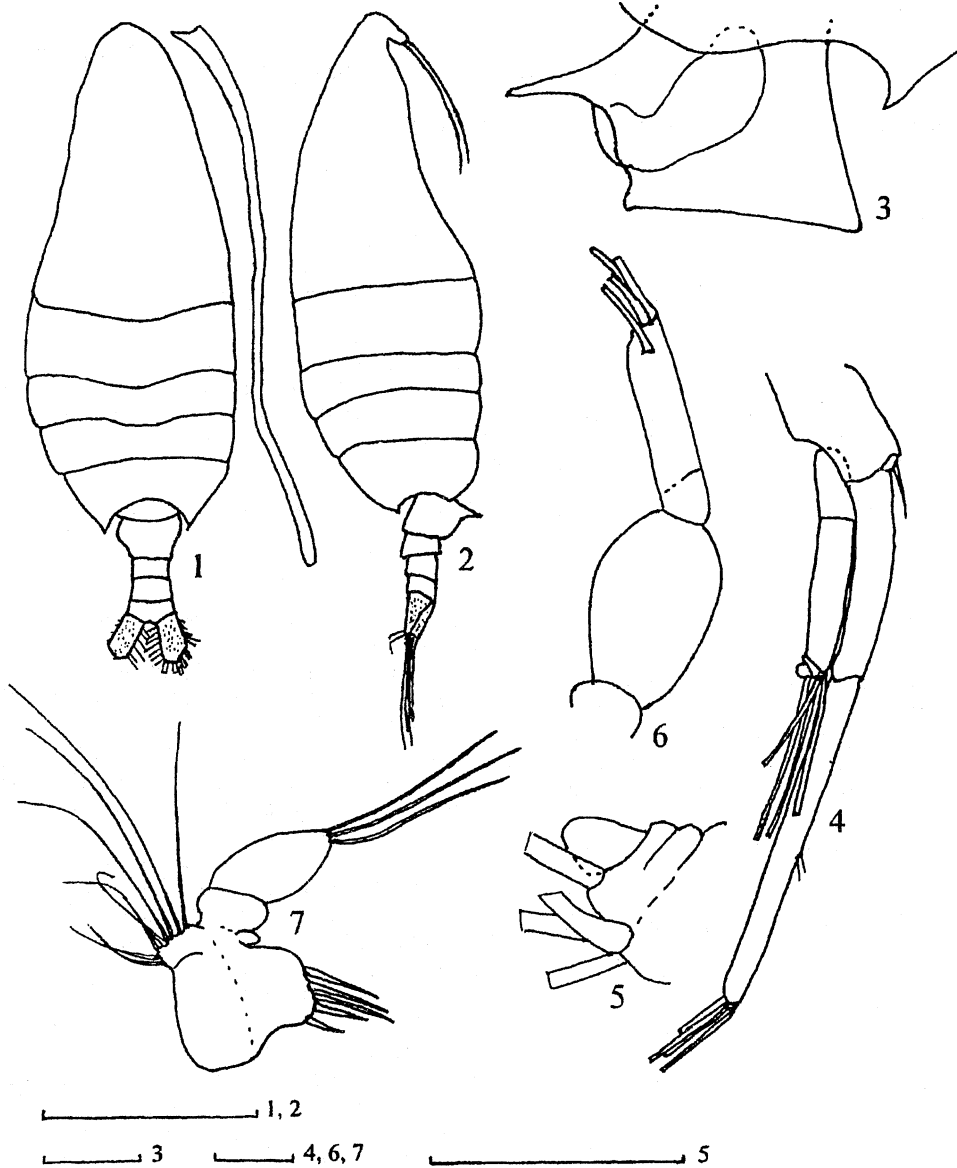
Paraugaptilus mozambicus Gaudy, 1965: 124, figs 1-4 (female).

Material. 4 ♀, 1 ♂ sampled in the 17th cruise of R/V "Vityaz" at the following stations in the Indian Ocean: Sta. 2647, No. 74, 22° 21' S, 43° 04' E, depth 404-501 m, sample 1.5 m above bottom, 4.XII.1981, 2 ♀, 1 ♂; Sta. 2661, No. 101, 22° 13' S, 43° 07' E, depth 320-260 m, sample 1.5 m above bottom, 4.XII.1981, 1 ♀; Sta. 2714, No. T-18, 33° 22' S, 43° 50' E, depth 850-790 m, sample 850-650 m, 16.XII.1981, 1 ♀. The plankton from the stations 2647 and 2661 was sampled with a closing Juday net (opening area 0.1 m², mesh size 178 μm). It was pulled with Zvuk-Geo apparatus near bottom. An Isaacs-Kidd trawl was used at the station 2714. See Birjukov & al. (1990) for details of the methods used.

Stations 2647 and 2661 are in the type locality of the species.

Description. Female. Total length 3.07-3.27, mean 3.19 mm. Head narrowed anteriorly, separated from Th1; Th4 fused with Th5. CTh 2.8-3.1 times longer than Abd. Posterior margins of CTh with short dorsal points. Abd 4-segmented. Genital segment slightly asymmetrical, with large sharp ventral projection. F rami twice as long as wide, with small hairs on surface. Rostrum with 2 long filaments. A1 of 20 segments, when straightened out as long as CTh and genital segment combined. Re A2 42% of Ri. Re with 4 long distal setae; Ri with 4 terminal setae and 2 thin short setae midlength of distal segment. Md palp without Ri, with 4 long distal setae. First internal lobe of Mx1 with 5 spines; the second one without any spines and setae; external lobe with 8 setae; Re with 3 terminal setae; Ri absent. Mx2 and Mxp with augaptiloid cups on distal setae. P1-P4 with 3-segmented rami. P1 with unclear boundary between Re2 and Re3 and between all segments of Ri. P5 as foliaceous plate, resembles P5 of many other species of this genus.

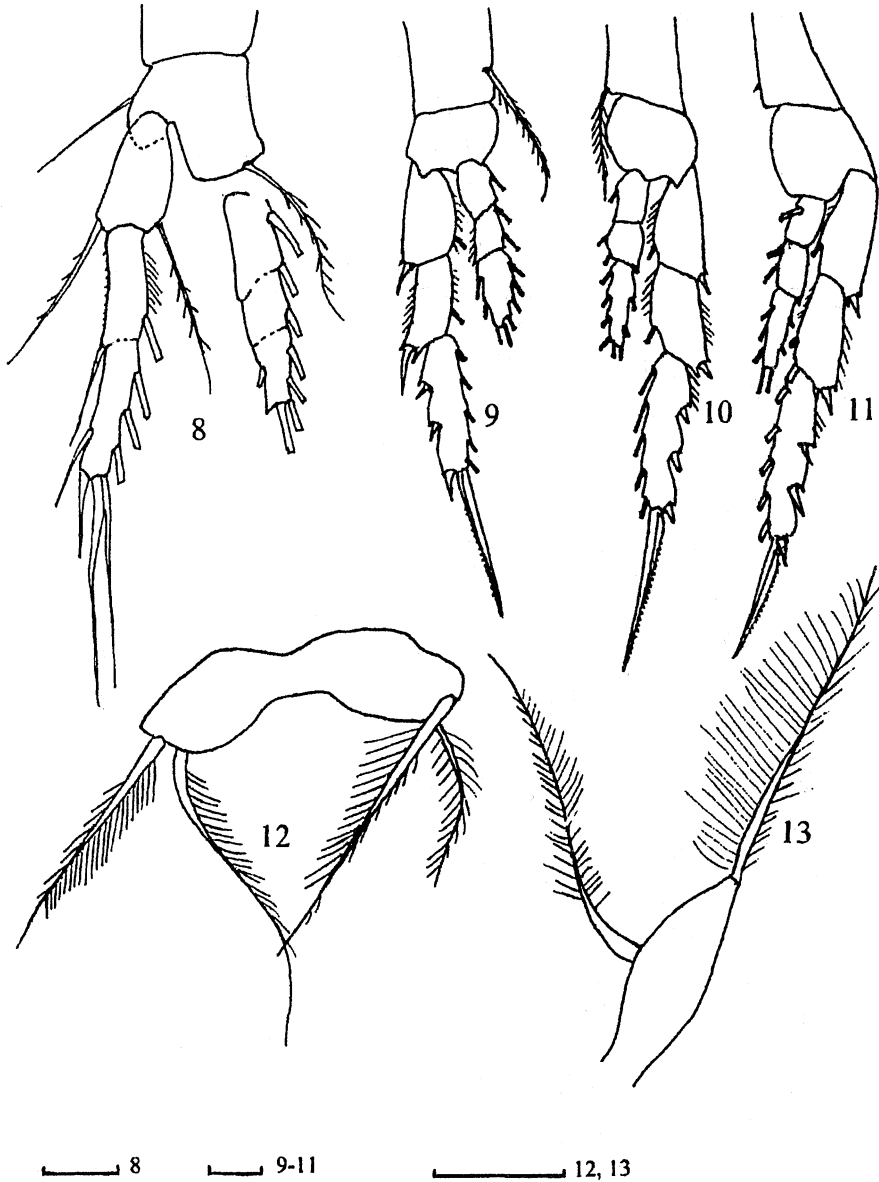
Male. Badly damaged, probably some setae lost. Total length 3.3 mm. Head separated from Th1; Th4 and Th5 fused. Last segment of Th with short right dorsal points. Abd 5-segmented. CTh 3.0 times longer than Abd. F rami twice as long as wide, with small hairs on surface. Rostrum with 2 long filaments. A1 broken. Re A2 41% of Ri. Re



Figs 1-7. *Paraugaptilus mozambicus*, female: 1-2, dorsal and lateral view; 3, Th5 and genital segment; 4, A2; 5, distal part of Re A2; 6, Md palp; 7, Mx1. Scales: 1, 2 - 1 mm; 3-7 - 0.1 mm.

with 5 distal setae, one of them thin and short; Ri with 5 terminal and 1 large setae midlength of last segment (in female, Ri A2 without such large seta). Md palp with 4 distal and 1 proximal well-developed setae (in female without proximal seta). In the closest species *P. bermudensis*, Deevey (1973) noticed the same differences between male and female A2 and Md palp. Mx1, Mx2, Mxp and P1-P4 as in female. P1 with unclear

boundaries between the same segments as in female. After Deevey, in *P. bermudensis* all segments of Ri P1 are nearly fused in female, but with clear boundaries in male. Thus, not all species of *Paraugaptilus* are sexually dimorphic in the structure of P1. The specific peculiarities of P5 are structures of the last Re segments. Re2 of right P5 fused with Re3. Re2 + Re3 4 times longer than Re1. Distal half of last segment narrowed, with

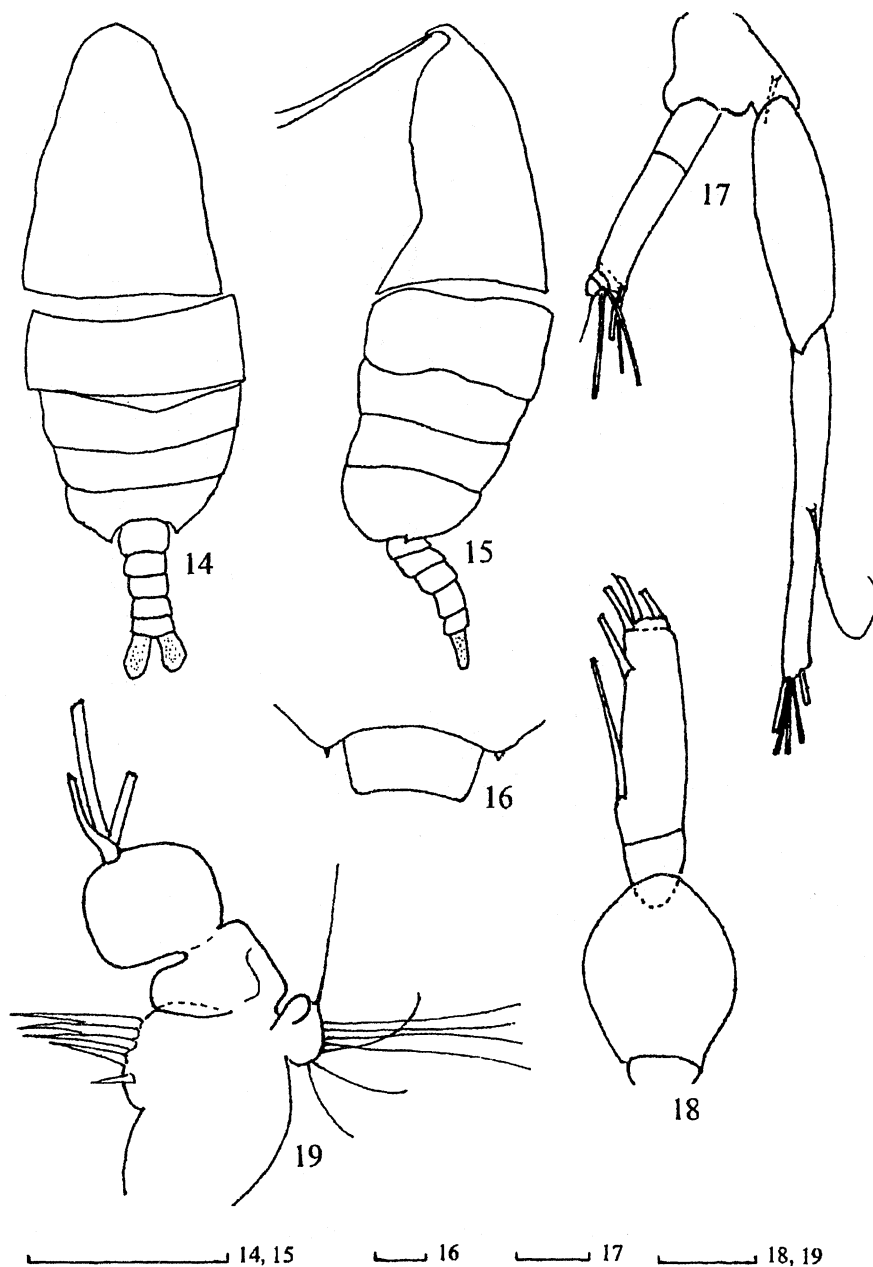


Figs 8-13. *Paraugaptilus mozambicus*, female: 8, P1; 9, P2; 10, P3; 11, P4; 12, P5; 13, P5, lateral view. Scale: 0.1 mm.

small terminal spine. Re2 of left P5 swollen inward, with a small setule on outer margin. Last segment of Re with curved blunt pincerlike spine and process, spine shorter than process.

Discussion. The females described above belong to *P. mozambicus* as they have the same body length, long sharp ventral projection of the genital segment, and the last CTh segment with points. They were sampled

from the type locality. They have some differences from the original description: longer A1 and hairy F. After Gaudy (1965), the bent A1 are shorter than CT1. However, when straightened they extend to the end of CTh (see Gaudy's Fig. 1). Deevey (1973) erroneously compared in the key to *Paraugaptilus* the lengths of the bent A1 of *P. mozambicus* and the straightened A1 of other species.



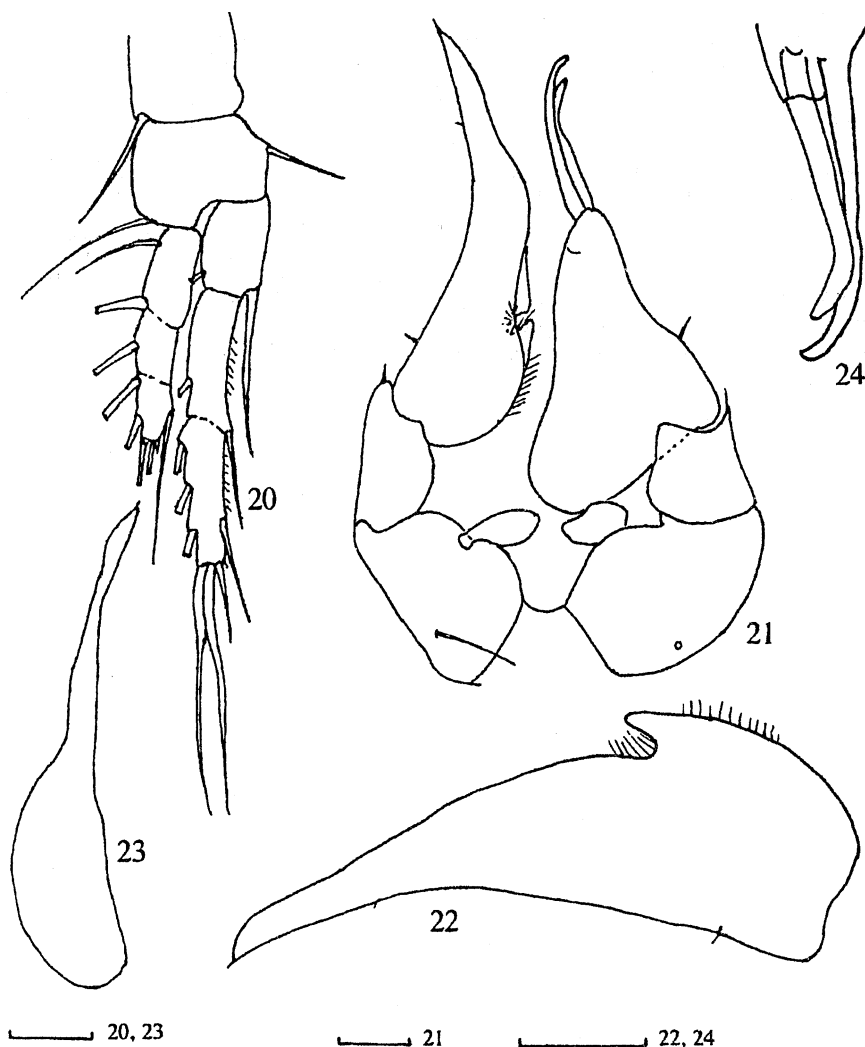
Figs 14-19. *Paraugaptilus mozambicus*, male: 14-15, dorsal and lateral view; 16, posterior part of CTh; 17, A2; 18, Md palp; 19, Mx1. Scales: 14, 15 - 1 mm; 16-19 - 0.1 mm.

Straightened A1 of our female are as long as CTh and genital segment combined. Small hairs on F apparently were not noticed by Gaudy.

Females of *P. mozambicus* differ from females of the closely related *P. bermudensis* Deevey, 1973 in the longer and sharper ven-

tral projection of genital segment, straight, not hooked dorsolateral points of CTh, hairy F instead of hairy total Abd.

The male described above is the true male of *P. mozambicus*. It is similar to the female in body form and length, in hairy F. Like the female, it is close to *P. bermudensis*, particu-



Figs 20-24. *Paraugaptilus mozambicus*, male: 20, P1; 21, P5; 22, last segment of right P5; 23, the same, another view; 24, distal part of left P5. Scale: 0.1 mm.

larly in the structure of the left P5. It differs from males of *P. bermudensis* in the same characters as females of these species and in long thin distal part of right P5.

The male described by Gaudy as *P. mozambicus* belongs to some unknown species.

It differs from the true male of *P. mozambicus* in the rounded edges of CTh, curved sharp needle (not blunt spine) on the left Re3 P5, absence of process on Re3 and short last segment of right P5.

The male of *P. mozambicus* is similar to males of *P. meridionalis* Wolfenden. The latter were misidentified as *P. buchani* Wolfen-

den by Sars; the mistake was corrected by Deevey (1974). *P. mozambicus* differs from *P. meridionalis* in the very long Re of the right P5. Bradford (1974) recorded "*P. buchani*?" from the Pacific Ocean at 34° 32.5' S, 157° 31.5' E. His specimen is clearly not *P. buchani* as it has no bifid process on Re3 of the left P5. In our opinion, the male described by Bradford belongs to *P. mozambicus*, despite a difference probably not having taxonomic importance (in Bradford's male both F and anal segment are hairy).

Geographical distribution. Off the southwestern coast of Madagascar (Gaudy, 1965;

original data), southwestern Indian Ocean (original data) and southwestern Pacific Ocean at 33-34° S (Bradford, 1974).

Acknowledgements

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