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Notes on a mite *Xenopacarus africanus* n.g., n.sp.
parasitic in the nasal cavities of the African clawed frog
Xenopus laevis (Ereynetidae: Trombidiformes)

BY

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The new mite which is described here has been found in the nasal cavities of several clawed frogs, *Xenopus laevis*, that had been imported from South Africa.

It belongs to the family Ereynetidae, but as it does not fit exactly with any known genus of that family it is necessary to erect a new genus and a new species to contain it.

This new genus is placed here in the subfamily Lawrencarinae which contains, so far, all the known species parasitic in the nasal cavities of amphibians. This opinion seems to be justified, not only from the nature of the host but also because some morphological characters (structure of the legs, of the cuticle, of the chaetotaxy and of the anterior sensillae) and biological features (development through the following stages: egg - larva - protonymph - deutonymph - adults).

This new genus, however presents two important characters that do not fit exactly into the subfamily Lawrencarinae. The first character is the absence of the posterior pair of sensillae, which are replaced by normal hairs. The second character is the structure of the « erey-netal organ » which has a shape that is unique in the Ereynetidae. In all the other genera of this family this organ consists of a sac-like structure more or less deeply sunk into the body of the tibia I and

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generally connected with the dorsal surface by means of a narrow duct. Near this opening is a specialized hair that we have called « poil sensoriel satellite » (FAIN, 1962a, p. 304). In our new mite the ereynetal organ is replaced by a solenidion that is partly sunk into the body of tibia I. Near the base of this solenidion is a short barbed hair which probably represents the « poil sensoriel satellite ». Owing to the presence of these two divergent characters we propose to place this new genus in a new tribe, within the Lawrencarinae.

The unusual structure of the « ereynetal organ » in the genus *Xenopacarus* throws some light on the real signification of this organ in the Ereynetidae. GRANDJEAN (1939) believed that it is formed by a solenidion that has progressively sunk into the tibia. So far it was not possible to prove this opinion because a real solenidion had never been recognized in the ereynetal organ of any of the known species. In *Xenopacarus* a solenidion is clearly recognizable and this proves for the first time the correctness of GRANDJEAN's opinion.

FAMILY EREYNETIDAE OUDEMANS, 1931

Subfamily LAWRENCARINAE FAIN, 1957

Tribe XENOPACARINI nov. trib.

Definition: Differs from the Lawrencinae, as defined by FAIN (1962b), by the following characters: « ereynetal organ », very primitive, consisting in a solenidion partly sunk in the tibia I; posterior sensillae replaced by normal hairs; palps with three free articles.

Type genus: *Xenopacarus* nov. gen.

Genus XENOPACARUS nov. gen.

Definition: With the characters of the tribe *Xenopacarini*.

Type species: *Xenopacarus africanus* nov. spec.

Xenopacarus africanus nov. spec.

FEMALE (holotype) (fig. 1-2; 4-7): The first females that we obtained were filled with a very dark granular material that rendered a careful study of the idiosoma impossible. Fortunately the junior author succeeded in keeping the mites alive for some days at room temperature, away from their hosts. During this time the black granules gradually disappeared and the mites cleared.

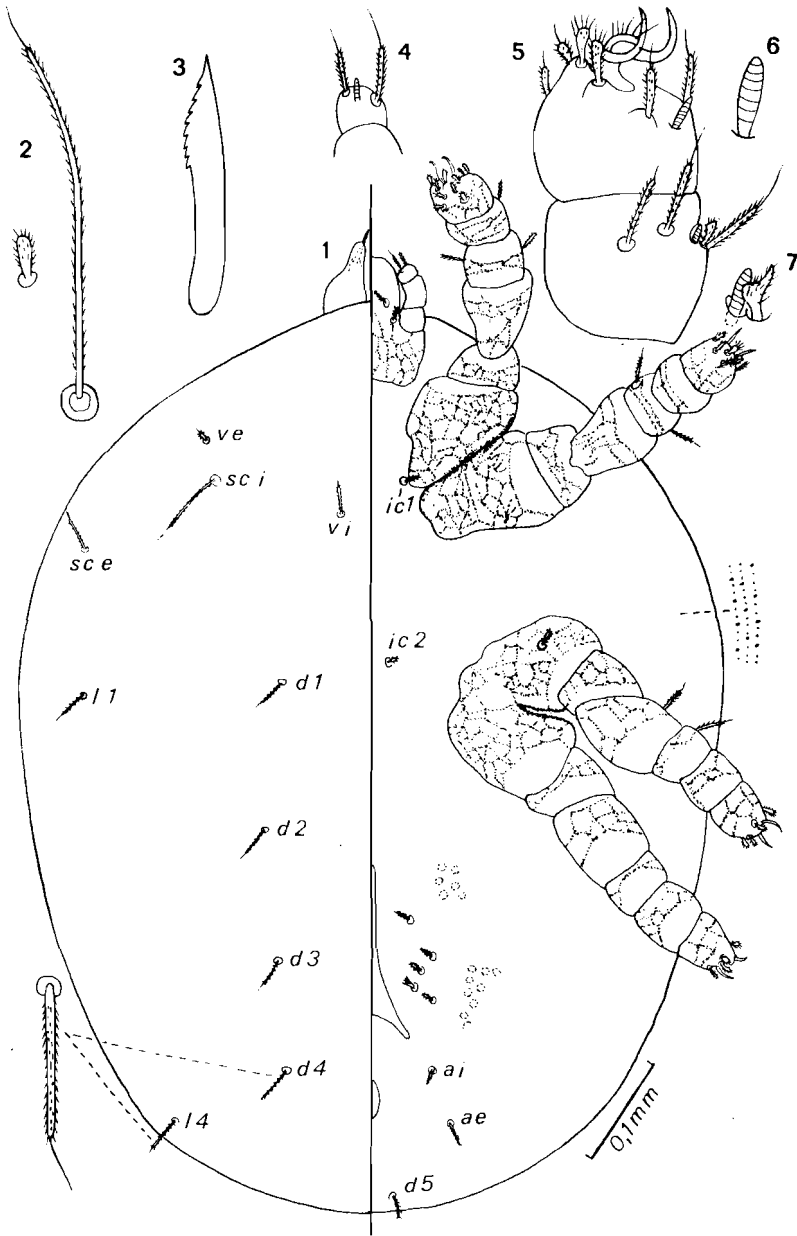


Fig. 1-7. — *Xenopacarus africanus* n. sp. - Female: dorsal and ventral view (1); sensilla and *ve* hair (2); palpal tarsus (4); tarsus and tibia of leg I in latero-dorsal view (5); solenidion of leg tarsus I (6); ereyneal organ (7). - Male: movable digit of chelicera (3).

The holotype is $690\ \mu$ in length (idiosoma) and $600\ \mu$ in width; 2 gravid paratypes measure (length \times width) respectively $750\ \mu \times 610\ \mu$ and $780\ \mu \times 610\ \mu$.

Cuticle finely striate-punctate. Coxas, legs and base of gnathosoma with a well-developed network pattern. Sejugal furrow poorly developed. Vulva in an everted T, $120\ \mu$ long. There are 10 to 12 pairs of small bare areas in the lateral parts of the genital area. Anus ventral. Gnathosoma: palps formed by three free articles. Chelicerae well developed with a strong movable digit $42\ \mu$ long and bearing a row of very small teeth. Legs relatively short; all tarsi bearing a pair of claws normally developed and an undivided hairy pulvillus.

Chaetotaxy of the idiosoma: We are utilizing here the new nomenclature of setae proposed recently by the senior author (FAIN, in press). Sensilla finely barbed, $75\ \mu$ long, the apex is bare. All the setae are barbed. The following setae are present on the idiosoma: *vi*; *ve*; *sci* (sensilla); *sc e*; *d 1* to *d 5*; *l 1*; *l 4*; *ic 1*; *ic 2*; *a i*; *a e*; there are 3 to 6 pairs of genital hairs. The base of *l 4* is superficial and not sunk in a pit as for *sc i*, therefore it cannot be considered as a sensilla.

Chaetotaxy of the legs: All the setae are finely barbed. Number of setae: Coxae 0-0-1-0. Trochantera 0-0-0-0. Femora 1-1-1-0. Genua 4-4-3(2)-1. Tibiae 3-1-1-1. Besides the 3 normal hairs, the tibia I bears also a small hair situated near the « ereynetal organ » (= satellite hair). Tarsi 12-8-7-7.

Chaetotaxy of the gnathosoma: Hypostome with 2 pairs of barbed hairs. Palpal tarsus with 2 barbed setae.

Solenidiotaxy: Tarsi I and II with a dorsal solenidion. That of tarsus II is partly sunk in the teguments. The « ereynetal organ » on tibia I is formed by a short solenidion of which the basal third is sunk into the teguments (fig. 7). Palpal tarsus with a well-developed solenidion completely external.

MALE (allotype) (fig. 3): Idiosoma $630\ \mu$ long and $480\ \mu$ wide. This specimen is rather opaque and strongly compressed. Another specimen is $600\ \mu$ long and $420\ \mu$ wide. General characters as in the female. It differs from the female by the following characters: the much smaller length ($25\ \mu$) of the genital slit; the presence of stronger teeth on the movable cheliceral digit; the structure of the solenidion of the palpal tarsus which is smaller and partly sunk into the tarsus. There are 4 pairs of genital setae (*gm* or *ge*). It seems that there is

also one pair of very small internal setae (*gi*) but the specimen is not clear enough in order to be sure of this. Other characters as in the female. In a paratype male the genital slit is very short ($15\ \mu$), there are 5 pairs of genital hairs (*gm* and *ge*) and no *gi*, hairs, and a large granular testis, T shaped, is visible inside the body.

DEUTONYMPH: Two specimens measure respectively (length \times width of the idiosoma): $420\ \mu \times 405\ \mu$ and $480\ \mu \times 375\ \mu$. The body is filled with unequal whitish or yellowish droplets and rather opaque. Sejugal furrow very poorly developed. Legs and gnathosoma as in the female except that there is no distinct network on these organs. Length of sensillae $70\ \mu$. There is no genital aperture. Number of setae on the idiosoma, the legs and the gnathosoma as in the female, genital hairs 3-4 or 4-4.

PROTONYMPH: Two specimens measure respectively (idiosoma, length \times width): $300\ \mu \times 250\ \mu$ and $375\ \mu \times 300\ \mu$. Characters as for the deutonymph except that the hairs are shorter and that some are lacking. There are no genital hairs, the tarsi bear only 10-6-5-5 setae, and the tibia, genu and femur IV are devoid of setae.

LARVA: Idiosoma $300\ \mu$ long and $240\ \mu$ wide. All the legs are normal in shape and bear equal and normally formed claws. Sensillae $75\ \mu$ long. Chaetotaxy of the idiosoma, the gnathosoma and the legs I to III as in the protonymph.

Host and locality: In the nasal cavities of several *Xenopus laevis* collected in South Africa and imported recently into Leeds, England. (Imported in January 1969, examined in July and August 1969).

Types: Holotype and allotype in the British Museum. Paratypes (5 ♀♀, some of which very badly crushed; 1 ♂ and several nymphs and 1 larva) in the collections of the authors.

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