

A NEW CASE OF GYNANDROMORPHISM IN *AMBLYOMMA VARIEGATUM* (ACARI : IXODIDAE)

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EQUAL BIPARTITION	SUMMARY : A new case of gynandromorphism has been found in <i>Amblyomma variegatum</i> . It's a perfect bipartite gynandromorph with an hermaphrodite genital opening.
BIPARTITION ÉGALE	RÉSUMÉ : Un nouveau cas de gynandromorphisme est apparu dans un élevage d' <i>Amblyomma variegatum</i> . C'est un gynandromorphe biparti dans lequel la bipartition passe exactement au milieu de l'animal et intéresse également le gonopore.

Some cases of gynandromorphism in *Amblyomma variegatum* or in other species of the same genus have been reported in the literature (see references).

BRUMPT (1922) described a bipartite individual of which the capitulum shows only female characteristics. SANTOS DIAS (1953) presented a bipartite specimen of *Amblyomma variegatum govurensis* with a female genital opening.

Among *A. variegatum* adults from a tick colony of Ciba-Geigy Ltd, we identified a perfectly bipartite individual, of which the left side is male and the right side female. The two parts are joined by a longitudinal suture (Fig. 1-2).

Sexual dimorphism being a rule in Ixodids, we based our diagnosis on the following features :

Dorsal view : — The basis capituli bears two areae porosae in females. Our bipartite tick has one area porosa on the right (female) side (Fig. 1).

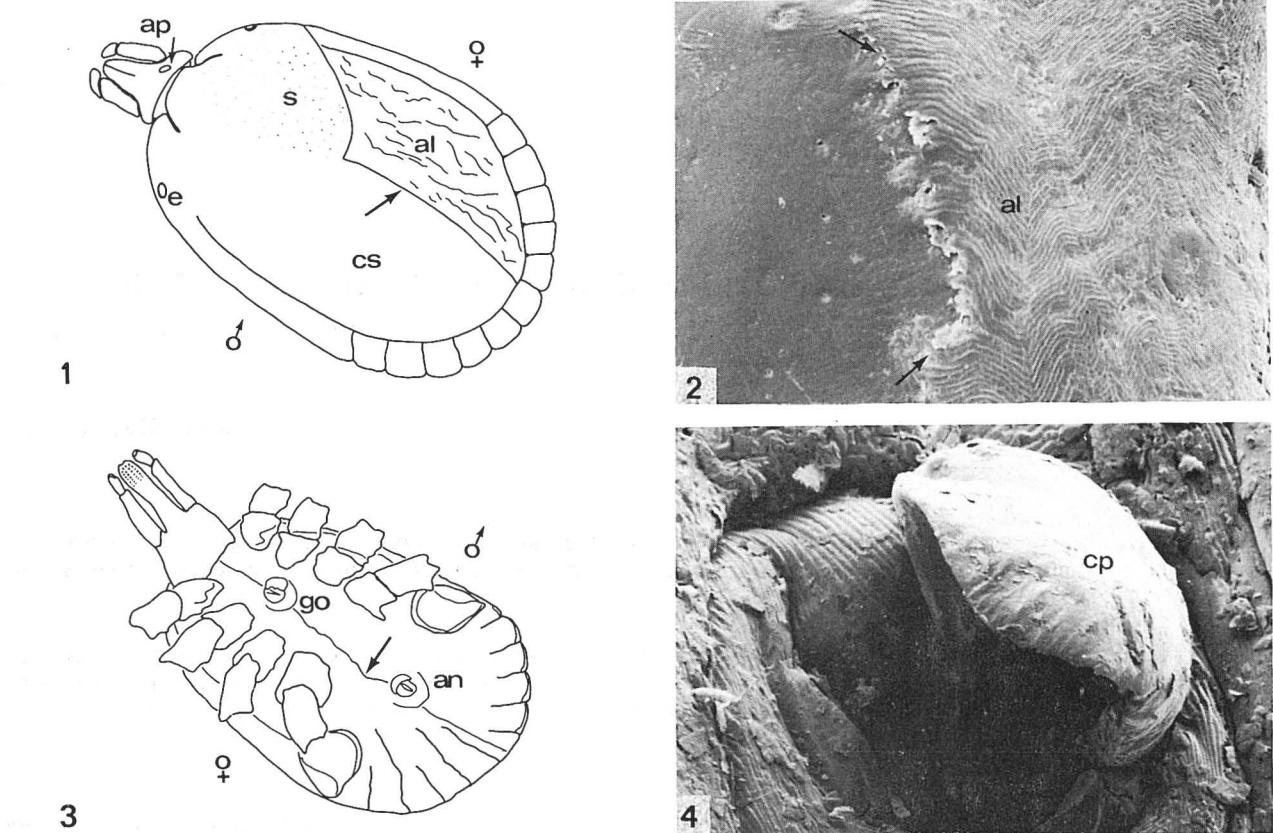
— The scutum of females covers 1/3-1/2 of the body, the posterior part being formed by the extensible alloscutum. The scutum covers the entire dorsal face in males. Our bipartite specimen shows a typical female scutum at the right side, and a male scutum at the left side (Fig. 1).

Ventral view : — The male genital opening is covered by a chitinous plate. In our bipartite tick the male half only of the gonopore is covered by a chitinous plate (Fig. 3-4).

This case of gynandromorphism is particularly interesting as the bipartition of the tick is equal and concerns also the genital opening. Such a case has never been reported in the literature at our knowledge.

The genesis of bipartite monsters has been discussed by CAMPANA-ROUGET (1959). The caryotype of *Amblyomma* species being mostly 20 + XX in females and 20 + XO in males (OLI-

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FIGS. 1-4 : *Amblyomma variegatum* bipartite gynandromorph.

1. Dorsal view ($\times 16$). 2. Detail of the dorsal longitudinal suture, showing the extensible alloscutum at the right side ($\times 150$). 3. Ventral view ($\times 14.5$). 4. The genital opening showing the chitinous plate covering the male half gonopore ($\times 200$). al, extensible alloscutum ; an, anus ; ap, area porosa ; cp, chitinous plate ; cs, conscutum ; e, eye ; go, genital opening ; s, scutum ; arrows indicate the longitudinal suture.

VER 1967), bipartite gynandromorphism is explained by the loss of a chromosome X during the first clivage, the plane of which apparently determines the sagittal axis of the embryo.

REFERENCES

- BRUMPT (E.), 1922. — Précis de parasitologie, 3^e édition — Masson et C^{ie}.
- BRUMPT (E.), 1934. — Le gynandromorphisme chez les Ixodinés. Un curieux cas obtenu dans un élevage d'*Amblyomma dissimile*. — Ann. Parasit. Hum. Comp., 12 : 98-104.
- CAMPANA-ROUGET (Y.), 1959. — La tératologie des tiques — Ann. Parasit. Hum. Comp., 34 : 209-260.

FONSECA DA (F.), 1935. — Gynandromorphismo em *Amblyomma cajannense* (Fabricius 1781) — Membs Inst. Butantan., 10 : 39-41.

GOTHE (R.), 1967. — Ticks in the south african zoological survey collection : part XIII, Gynanders of *Boophilus decoloratus* (Koch) and *Amblyomma hebraicum* (Koch) — Onderstepoort J. Vet. Res., 34 (2) : 541-546.

JOAN (T.), 1919. — Caso de gynandromorfismo en una garraapata (*Amblyomma neumannii*) — 1. Reunion nac. Soc. Argent. Ciencias nat. Tucuman 1916, Buenos Aires 1919 : 421-425.

OLIVER (J. H.), 1967. — Cytogenetics of acarines — Genetics of Insect Vectors of Disease. J. W. Wright & R. Pal, Elsevier Publishing Company.

- RECHAV (Y.), 1977. — A case of gynandromorphism in *Amblyomma hebraeum* (Acarina : Ixodidae) — J. Med. Entomol., **14** (3) : 304.
- SANTOS DIAS (J. A. T.), 1948. — Um caso deformíde num *Amblyomma tholloni* (Neum. 1899) — Mocambique, **55** : 41-45.
- SANTOS DIAS (J. A. T.), 1953. — A further case of gynandromorphism, observed on an *Amblyomma va-*
riegatum govurensis (T. Dias 1950) — Anais Inst. Med. Trop. Lisb., **10** : 63-68.
- SCHULZE (P.), 1933. — Über Zeckengynander — Z. Morph. Ökol. Tiere., **26** : 427-436.
- SUNDMAN (J. A.), 1965. — A case of gynandromorphism in *Amblyomma imitator* — Ann. Entomol. Soc. Amer., **58** (4) : 592-593.

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