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A new mite (Acari, Anoetidae) parasitizing the gills of young eels **Anguilla anguilla** (L.)*

by A. FAIN** and C. BELPAIRE***

Summary

Histiostoma (*Ichtanoetus*) *anguillarum* subg. and sp. n. (Acari, Anoetidae) is described from the gills of young eels which were stocked in tanks in Leuven. Most of the eels were parasitized. All the stages of the mites (adults, tritonymphs protonymphs and larvae) except deutonymphs, were found attached to the gills.

Résumé

Histiostoma (*Ichtanoetus*) *anguillarum* subg. et sp. n. (Acari, Anoetidae) est décrit d'après des specimens trouvés sur les branchies de jeunes anguilles stockées dans des tanks à Leuven. La plupart des anguilles étaient parasitées. Tous les stades du développement furent découverts sur les branchies (adultes, tritonymphes, protonymphes, larves) excepté les deutonymphes qui sont encore inconnues.

The parasitism of fish by mites has been recorded for the first time by Fain and Lambrechts (1985). The mites were found in large numbers in the swim-bladder of an aquarium fish, *Pangasius sutchi* that died in Antwerp. These mites, which had caused lesions of this organ, belonged to a new species *Histiostoma piscium* Fain and Lambrechts, 1985, in the family Anoetidae.

In the present paper we describe a second case of parasitism of fish by mites found by the second author. The mites also belong to the genus *Histiostoma* but to a new species close to *H. piscium*.

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They were attached to the gills of young eels, *Anguilla anguilla* (L.) which were reared in tanks, in Leuven, for about two months. These eels were 7 to 9 cm long and had a weight of 500 to 1000 mg. They had been caught two months earlier in the mouth of the river Loire, France, when returning to this river, coming from the ocean.

Approximately 80 % of the eels were infected (from a sample of 30 animals examined) ; the number of mites found per eel varying from 1 to 20. Most of the mites were immatures (larvae, proto and tritonymphs), the adults representing about one third. The maximum of adult mites found in one eel was four. No hypopi (deutonymphs) were observed. It seems that the complete life cycle can be realized on the surface of the gills, however numerous mites (adults and immatures) were also found free on the bottom of the tanks containing the infected eels.

Description of the mite

This new mite belongs to a small group, in the genus *Histiostoma* Kramer, 1976, consisting of four species characterized as follows : In both sexes the fixed digit of the chelicerae bears numerous teeth (14 to 30) and the ventral sclerotized rings are elongate ; in the male (known only in two species) the posterior pair of ventral rings is situated at the level of the penis. Biologically all these species are able to survive in water tanks under completely immersed condition and two of them have been found parasitizing fish. We think that these characters justify the separation of these four species in a new subgenus *Ichtanoetus* in the genus *Histiostoma.*

FAMILY ANOETIDAE OUDEMANS, 1904

Genus *Histiostoma* Kramer, 1876

Subgenus *Ichtanoetus* subg. nov.

Definition : This new subgenus differs from the nominate subgenus by the following characters : In both sexes the fixed digit of chelicerae bears numerous teeth (14 to 30) and the ventral rings are elongate ; in the males the posterior ventral rings are

situated at the level of the penis. Biologically these species are able to live in water in completely immersed conditions.

Type species : *Histiostoma* (*Ichtanoetus*) *anguillarum* sp. n.

Other species : *Histiostoma* (*Ichtanoetus*) *piscium* Fain and Lambrechts, 1985, tax. n. ; *H.* (*Ichtanoetus*) *nigrellii* Hughes and Jackson, 1958, tax. n. and *H.* (*Ichtanoetus*) *cyrtandrae* (Vitzthum, 1931) tax. n.

Histiostoma (*Ichtanoetus*) *anguillarum* spec. nov.

Male (fig. 1-7) : Holotype 219 µm long and 105 µm wide (idiosoma). In 3 paratypes 209 × 100 µm, 207 × 103 µm and 198 × 96 µm. Dorsum : Propodonotum with a punctate shield extending from anterior margin of propodonotum until setae *sc e* ; the anterior part of this shield bears a faint network of lines. Sejugal furrow well developed. Hysteronotum with a median shield longer than wide. Chaetotaxy (length of setae in µm) : *vi* 12 ; *ve* 15 ; *sc i* 15 ; *sc e* 24 ; *dl* 15 ; *d2* 15 ; *d3* 25 ; *d4* 25 ; *l 1* 15 ; *l 2* 18 ; *l 3* 25 ; *l 4* 35 ; *l 5* 35 ; *h* 32. Most of these setae are situated at the apex of small cuticular elevations. Orifice of oil-gland situated between *d 2* and *l 3* ; it bears a trifid papilla. Venter : Sternum relatively long. Epimera II-IV free. Chitinous rings oval, the posterior pair situated at the level of the penis. There are 2 pairs of anal setae. Gnathosoma : Chelicerae with fixed digit bearing 18 to 26 teeth (holotype and paratypes). Palps with 2 unequal setae 30 and 12-15 µm long respectively. Legs long, ending in a well-developed claw. Lengths of tarsi I-IV (in µm) : 42-42-36-48.

Chaetotaxy of legs (number of setae) : Tarsus I with 12 setae of which 7 apical (4 apicoventral spines, 2 apicodorsal spines, 1 long and thin apicodorsal setae), 4 median (3 spines and 1 thick seta) and 1 basal spine. Other tarsi with 11-8-8 setae, most of them being spines. Tibiae I-IV with 2-2-1-1 spines. Genua with 2-2-0-0 spines. Femora with 1-1-0-1 spines. Trochanters with 1-1-1-0 setae. Solenidia : Tarsus I with a thick apical *ω 3*. Tarsus II with a basal *ω 1*. Tibia I with *ω 1*, *phi I* and a famulus.

Female (fig. 8-14) : Length and width in 4 paratypes (idiosoma, in µm) : 300 × 160 ; 270 × 145 ; 246 × 135 ; 240 × 128. The largest paratypes contain 3 unequal eggs, the broadest one

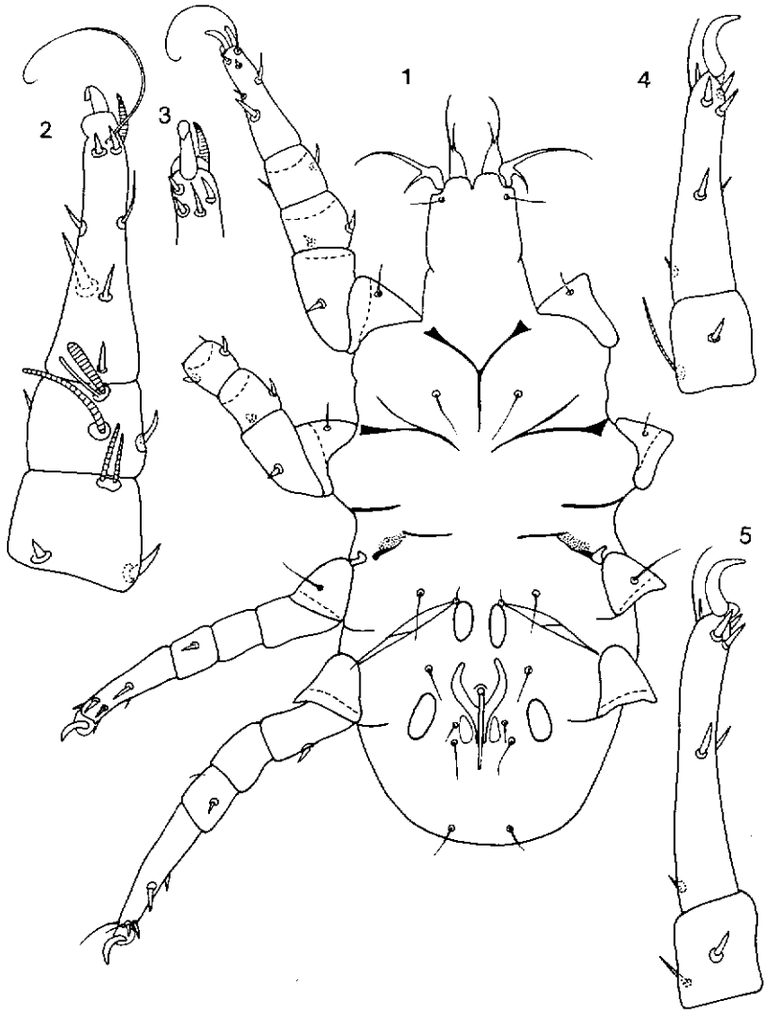

FIG. 1-5. — *Histiostoma* (*Ichtanoetus*) *anguillarum* sp. n. Male in ventral view (1); leg I (2) dorsally; apex of leg I ventrally (3); leg III (4); leg IV (5).

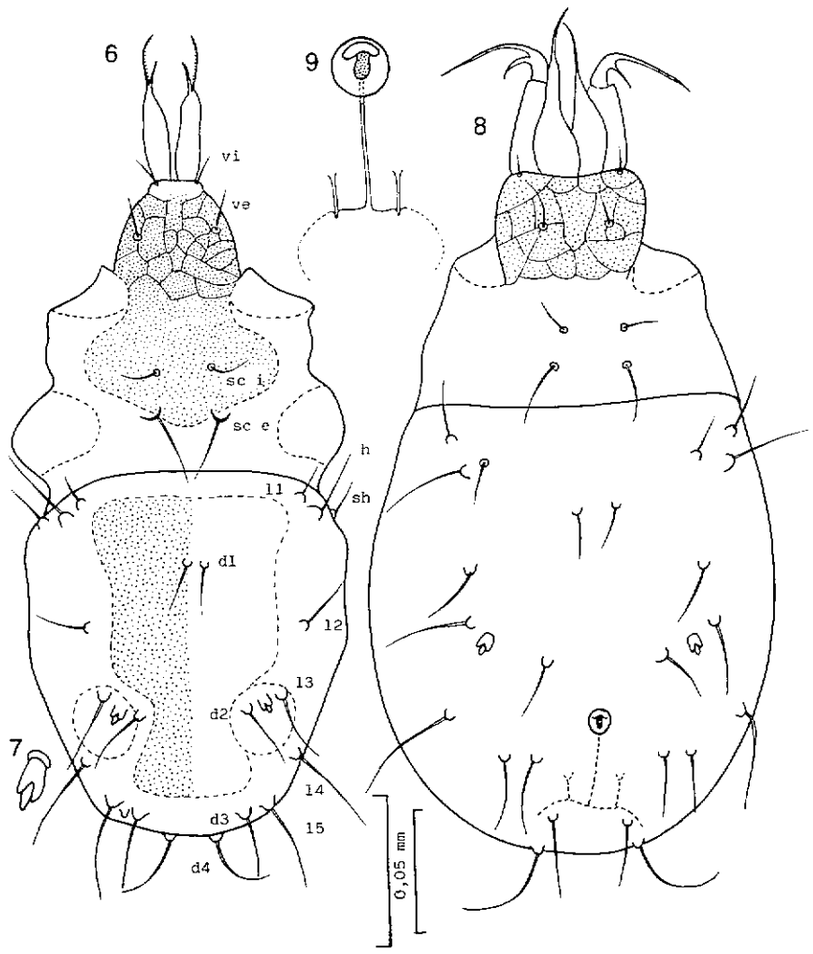

FIG. 6-9. — *Histiostoma* (*Ichtanoetus*) *anguillarum* sp. n. Male in dorsal view (6); trifid papilla of the oil gland orifice (7). Female in dorsal view (8); copulatory orifice and bursa (9).

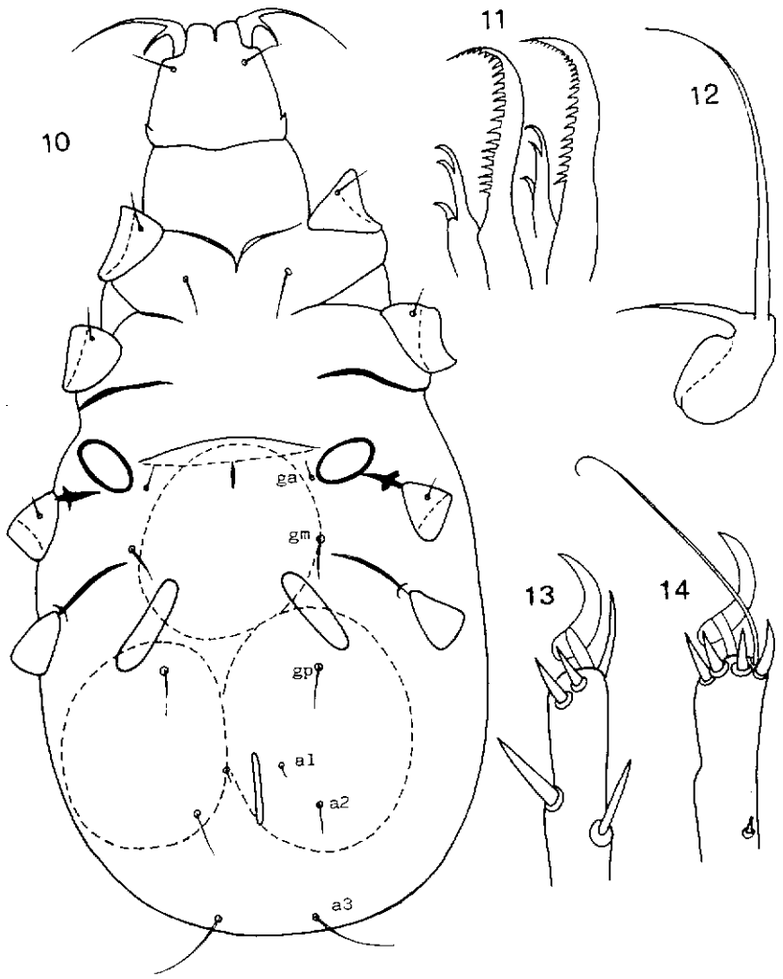

FIG. 10-14. — *Histiostoma* (*Ichtanoetus*) *anguillarum* sp. n.. Female in ventral view (10); digits of chelicerae (11); palp (12); apical half of leg I in posterior (13) and anterior view (14).

being 90 µm long and 69 µm wide. Dorsum as in the male but there is no hysteronotal shield and the propodonotal shield is shorter. Bursa copulatrix directed posteriorly. Venter : Sternum very short. Ventral rings oval, the anterior pair thicker than the posterior one. Fixed digit of chelicerae wtih 20 to 26 teeth. Length of tarsi I-IV (in µm) : 50-45-42-54. Chaetotaxy of dorsum as in male. Length of some setae in µm : *sc i* 20 ; *sc e* 25 ; *dl* and *d2* 22 tot 25 ; *d3* 30-35 ; *d4* 30 ; *d5* and *l5* 35 ; *l 3* 30-35 ; *l 4* 45 ; *h* 30. There are 3 pairs of anals. Legs as in male but most of the tarsal setae are longer and stronger.

Tritonymph : Length and width of 3 paratypes (idiosoma in µm) : 186 × 135 ; 180 × 105 ; 179 × 100. Hysterogaster bearing 2 pairs of chitinous rings, the anterior smaller and in short oval, the posterior larger, more elongate and more widely apart.

Protonymph : Length and width of 3 paratypes (idiosoma in µm) : 160 × 93 ; 145 × 75 ; 138 × 80. Hysterogaster with only one pair of oval chitinous rings.

Larva : Length and width of 4 paratypes (idiosoma in µm) : 112 × 72 ; 105 × 68 ; 100 × 60 ; 91 × 62. Venter with only one pair of chitinous rings, they are small, rounded and situated on coxae I.

Remarks :

The male of this species differs from that of *H. nigrellii* by the presence of 2 well-defined punctate shields on the dorsum, the diffferent situation of setae *sc e* much more closer to the midline, the longer sternum.

The female differs from that of *H. nigrellii* by the situation of the setae *sc-i*, *sc e* and *a 2* much closer to the midline, the smaller size of the body and the relatively larger size of the ventral chitinous rings. The female differs from that of *H. piscium* by the presence of a trifid papilla on the oil gland orifice, the absence of a punctate shield behind the copulatory orifice, the longer bursa, the shorter anterior palpal seta, the smaller size of the body. It differs from the female of *H. cyrtandrae* by the much shorter length of most of the dorsal setae, the rounded shape of the copulatory orifice, the situation of the setae *sc e* behind the *sc i* (on the same level in *H. cyrtandrae*), the smaller size of the body.

Host and locality.

Holotype and 20 paratypes male, 24 paratypes female, 66 paratypes nymph (22 tritonymphs and 38 protonymphs), 24 paratypes larva, from the gills of young eels *Anguilla anguilla* (L.) catched at the mouth of the river Loire and reared for several months in tanks in Leuven (June 1985)(Coll. C.B.). Holotype and paratypes in the Institut royal des Sciences naturelles de Belgique. Paratypes in the British Museum, Natural History.

Acknowledgements

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Contribution à la connaissance des Meloidae (Coleoptera) de Mauritanie*

par Marco A. BOLOGNA**

Résumé

L'étude d'une collection de Coléoptères Meloidae de Mauritanie permet des considérations faunistiques et zoogéographiques sur le peuplement de ce pays. Il faut ajouter 9 espèces nouvelles aux 17 déjà connues de ce pays. L'examen des données montre que le peuplement est presque totalement afrotropical (surtout parce que le sud du pays est mieux connu), que les éléments paléarctiques sont très réduits et qu'il s'agit toujours d'espèces sahariennes. La majorité des espèces afrotropicales est diffusée dans la bande à savane du Sénégal au Soudan et à la Somalie. Enfin, on peut constater l'existence d'un mélange entre faunes afrotropicale et paléarctique, surtout dans la zone centrale du pays (Adrar et Atar.)

Les régions saharienne et sahélienne revêtent un intérêt particulier pour l'étude des éléments extrapaléarctiques de la faune méditerranéenne, car elles représentent une zone de transition entre les régions afrotropicale et paléarctique.

J'ai eu récemment l'occasion d'examiner un petit, mais très intéressant lot de Meloidae de Mauritanie méridionale, que le Dr Ch. Verstraeten (Faculté des Sciences agronomiques de l'Etat à Gembloux) a bien voulu me confier pour étude. Ce matériel a été récolté, avec d'autres insectes ravageurs ou non des cultures, dans le cadre du projet « Lutte intégrée ». Ce projet lancé par le Comité inter-états pour la Lutte contre la sécheresse au Sahel et financé par l'A.I.D. et la F.A.O. est dirigé en République islami-

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