

## SUCCESSFUL ERADICATION OF A MICROSPORIDIAN, *NOSEMA SP.*, IN A MOSQUITO COLONY

by

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The discovery of Microsporidia in a mosquito colony can be dramatic because of its potentially pathogenic effect on mosquitoes (3). Furthermore, Microsporidia interfere with the sporogonic cycle of malaria parasites (2). The usual procedure for addressing the problem is to destroy the mosquito colony, sterilize the insectary and start a new colony with unparasitized specimens.

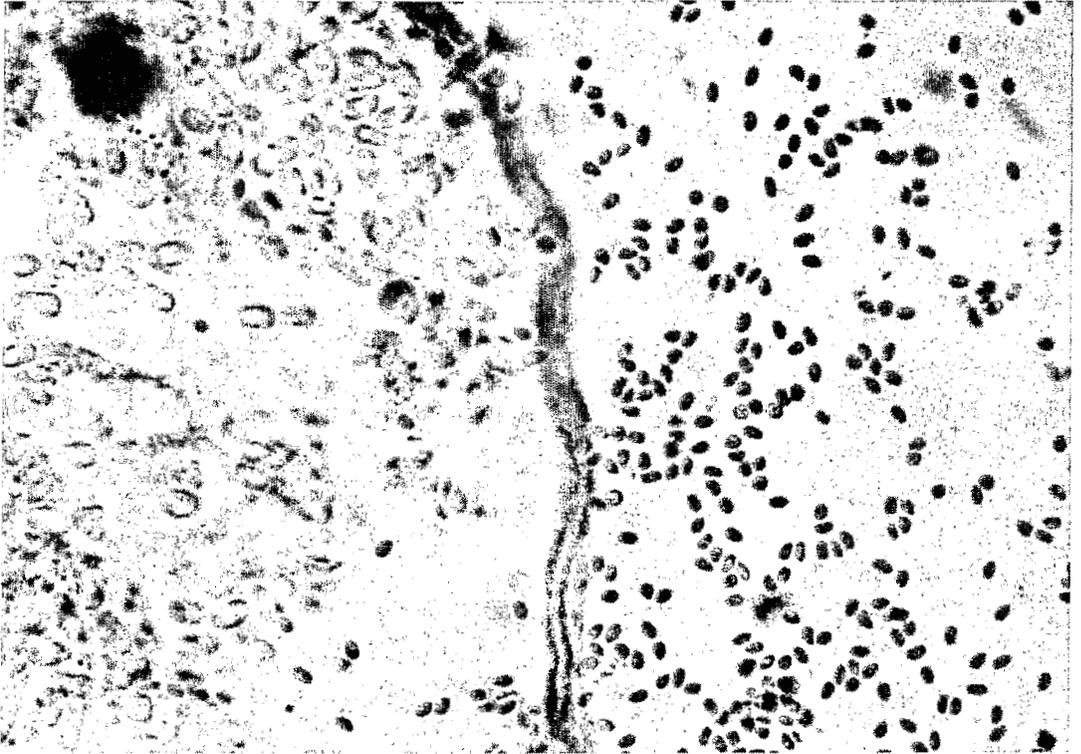
Alger and Undeen (1) have previously demonstrated that *Nosema sp.* may be controlled by rinsing mosquito egg with water, HCl or NaOH, which allow the survival of the mosquito colony at a moderate infection rate (<16%).

We report here total elimination of an unnamed species of *Nosema* (Microspora, Microsporida) discovered in our insectary at Yaounde, Cameroun, among the local strain of *Anopheles gambiae s.s.* (Diptera, Culicidae).

A few months after the discovery of the parasite, the almost totality of the colony was infected at larval and adult stages. The infection came into notice by spores which infected a variety of tissues, particularly external wall of the gut of both larvae and adults. The mature spores were ovoid (photo). Infection expressed by an important larval mortality and a reduction of adult longevity. The following measures were taken.

- The spring-water for aquatic stages of mosquitoes was filtered on a porcelain filter.
- The eggs were rinsed with 1% HCl on a filter-paper.
- At aquatic stages, any potential contamination from a rearing basin to another was avoided. The use of one pipette for hand-collecting pupae was restricted to one basin.
- Slow developing larvae were taken away.
- A greatest care was taken in washing the adult cages with soap. Dead body of mosquitoes were daily taken away.
- Contacts between emerging and aged adult mosquitoes were avoided. Pupae were always placed in new clean cages.

Results were not seen in the first treated generation. But, after some weeks, the infection rate of the colony decreased progressively and reach zero in three months. Obviously, among these measures it is not possible to attribute the efficiency to one of them in particular. At that time egg-rinsing



Spores of *Nosema* sp. in a squashed preparation of *Anopheles gambiae* salivary gland

was only performed with filtered water; mosquitoes (abnormally small while rinsed with HCl 1%) recovered their normal size. For ten months, no microsporidia have been microscopically observed in the insectary. All measures are maintained as a precaution against a still possible reinfection of the colony.

We hope these data will incite any entomologist involved in a *Nosema* parasiting mosquitoes colony to attempt at first the eradication of the parasite. Of course this attempt does not exclude, in a second time, to eliminate parasites by destroying mosquitoes.

#### REFERENCES

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