

LEISHMANIASIS IN LYBIA AND STUDIES ON SANDFLIES

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Two forms of leishmaniasis occur in Libya, cutaneous (CL) and visceral (VL). Historical records of CL in Libya are dated back to 1912-1938. Until 1970, the disease has been reported only sporadically. Since 1971 increasing numbers of cases were recorded over a wide area south and west of Tripoli extending as far as Nalut near the Tunisian border. True outbreaks of CL started from 1970, and are apparently continuing to occur until now. CL is clearly common and endemic in the area, extending from Tripoli to Nalut (Tunisian border) and from the coast on to the plateau of Jebel Nefussa. The localities in which cases were described varied in altitude from sea level to 800 m. This covers the range of bioclimatic zones from almost saharan (Nalut) to semi arid (Gharian). In fact distinct patterns of CL could be distinguished in Libya :

- In the development projects, where new ground is being cleared for settlement. Here the transmission is intense and characterized by infection of a large proportion (up to 20 %) of the (mostly foreign) workers, and nationals, with multiple sores all over the limbs and even on the body. This clinical presentation is typical of *Leishmania major* CL and was confirmed by isoenzyme typing of isolates by Ashford (*L.m.* LON 1.) in 1971 and more recently by our team (*L.m.* MON25 = LON 1). This form is probably transmitted by *Phlebotomus papatasi*. *Psammomys obesus* and *Meriones libycus* are proven reservoirs (Ashford et al, 1971) in Libya. According to the informations obtained from the National Leishmaniasis Programme Unit of the Basic Health Care Division together with our observations on the field, it appears that CL is presently still endemo-epidemic in the previously known foci. New foci were recorded in Beni Walid area, South East of Tripoli (Oueshtata, Beni Walid, Mizda). Annual records of CL in these areas from 1980 to 1990 ranged from 87 to 786 and totalize 2340 cases. Other areas remain to be investigated.

- In the Eastern Region of Libya (Cyreneica-Benghazi), around 10 single face CL cases/year are diagnosed in the Department of Dermatology from the Green Mountain region but also from Suluq, Qaminis and Djedabiyah. The lack of information on movement of patients and the absence of isoenzyme typing of parasites from these areas do not allow to conclude on whether these cases are imported from *L. major* areas or are local cases. The latter hypothesis of the existence of sporadic CL in known VL foci (especially in the Green Mountains region) raises the question of the possible occurrence in Libya of *L. infantum* CL, similar to the form described in Tunisia, Algeria and South Europe (Italy, France, Spain, Portugal).

- Similarly, the existence of sporadic and chronic (more than one year duration)

in villages in stony hills at less than 100 Km from *L. killicki* MON.8 (*L. tropica* complex) foci in neighbouring Tunisia suggest that the latter parasite might occur in Libya as well.

VL is of the infantile mediterranean type in Libya with very few adult cases. It occurs sporadically in two main northern foci in the Tripoli region and the Eastern part of the country in the whole area of the narrow strip of coastal plain from Benghazi to Tobruk, bounded by the Green Mountain to the South. These foci correspond to the most humid zones in Libya, where the annual rainfall varies from 250 to 600 mm.

It is important to cite the existence of newly described foci in the southern arid and dry saharian areas such as Oubari (Outrun, Wadi El Hala Baladiyat)(South West of Sebha) where 16 cases occurred from 1985 to 1990 according to Muhabresh (1990). In addition, other cases originating from unusual foci such as Al-Kufrah Oasis (South East) and Uzu (near the Chad border in the South East) were recently diagnosed by the pediatricians of the Children Hospital of Tripoli. The causative agent of VL in Libya is unknown. Canine leishmaniasis was reported by Dar et al. in 1987, and more recently confirmed by our team. The parasite species need to be identified properly and this is currently being carried out on 2 isolates from dogs from the Green Mountain area. Three candidates VL vectors are recorded in Libya: *P. perniciosus*, *P. longicuspis* and *P. langeroni*. Further investigation is needed for their incrimination.

In regard to vectors, little is known of the sandflies in Libya. The results of our entomological surveys during the 1991 and 1992 transmission season, using CDC light traps and sticky papers will be presented and discussed.

10,409 sandflies were collected particularly in VL and CL transmission foci. The following 21 species were identified, of which 12 species are recorded for the first time in Libya:

* *Phlebotomus* (*P.*) *papatasi* (4724), *P. bergeroti* (55), *P. Sergenti* (679), *P. alexandri* (290), *P. chabaudi* (50), *P. perniciosus* (12), *P. longicuspis* (546), *P. langeroni* (33), *P. orientalis* (or near *P. orientalis*, to be confirmed) (518), *P. tobbi* (1).

* *Sergentomyia* (*S.*) *minuta* (3131), *S. antennata* (137), *S. fallax* (193), *S. schwetzi* (3), *S. bedfordi* (1), *S. cineta* (1), *S. clydei* (25), *S. adleri* (7), *S. christophersi* (1), *S. dreyfussi* (1), *S. palestinensis* (1).