In recent years new foci of *Leishmania tropica* appeared in the Mediterranean states of Northern Africa. While *L. tropica* was isolated from humans, dogs and sand fly species *Phlebotomus sergenti* in Morocco and from humans and gerbils (*Gerbilus pyramidum floweri*) in Egypt; in Tunisia, Algeria and Lybia the parasite was isolated from humans only. In the last three mentioned states, only *L. tropica* referred as *Leishmania killicki* is present. In most of the *L. tropica* foci in the Mediterranean countries of Northern Africa transmission mode was not determined. It is unknown whether the cycle of *L. tropica* is anthroponotic or zoonotic and what is reservoir and vector. In Morocco and Egypt, the most probable vector is *P. sergenti* only, while in Tunisia, Algeria and Lybia the vectors could be also *P. (Paraphlebotomus) riouxi*, *P. (Paraphlebotomus) chabaudi*, *P. (Paraphlebotomus) alexandri* or *P. (Larroussius) perniciosus*. Considering the rural distribution and sporadic occurence of *L. killicki* cases, the parasite is presumed to have a zoonotic cycle and its reservoir host could possibly be *Ctenodactylus gundi*, which is relatively abundant in *L. kilicki* foci.