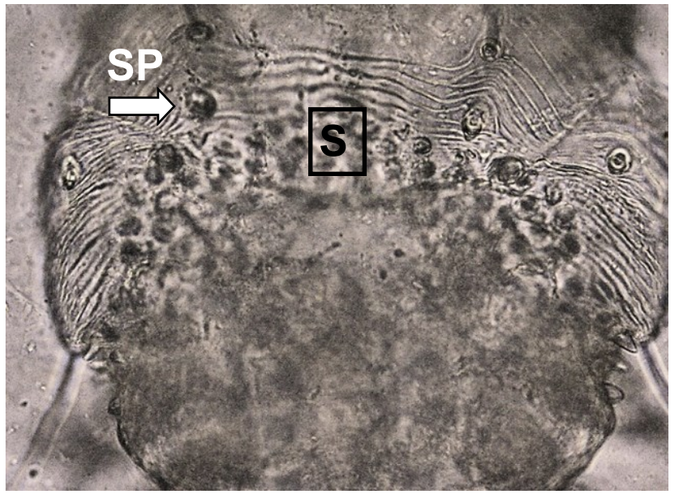
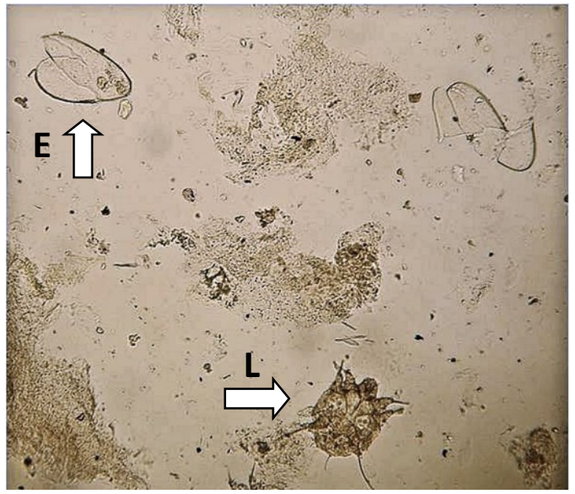
IDENTIFICATION OF MANGE MITES OF DOGS AND CATS (1): *SARCOPTES* AND *NOTOEDRES*

Mange mites cause dermatitis and can be conveniently divided into those that burrow or types that dwell on the skin surface. *Sarcoptes* and *Notoedres* are burrowing mites which create tunnels in the dermis where they feed and lay eggs

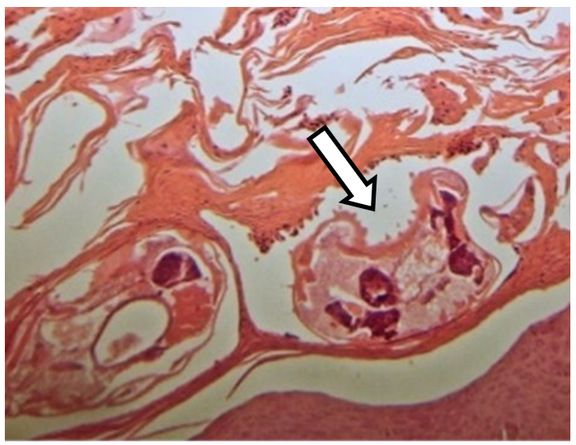
Sarcoptes scabiei causes an intensely pruritic dermatosis with papule and crust formation. The mites can be identified in skin scrapings by their round shape and the presence of numerous small triangular scales (S) and robust spines (SP) on the dorsal surface. The head is rounded and there are stumpy legs which barely protrude beyond the body margin. The presence of spines is a definitive feature for *Sarcoptes* - these features are absent in other mange mites. Examination of skin scrapings can reveal the presence of all the life cycle stages including eggs, egg shells (E) and the larvae (L), which have six legs. The adult mite measures up to 400µm. The mites can also transfer to people causing a transient dermatitis. Sarcoptic mange is a very rare condition of cats.

Close up magnification of developed *Sarcoptes* eggs shows the legs and dorsal scales of the larval mite, and some may even be in the process of hatching





Sarcoptes mites may be recognised in H&E-stained sections of the upper layers of the epidermis by the presence of the spines (arrow) and stumpy legs



Notoedres cati causes mange on the face of cats, and sometimes rodents. The parasite is round, with stumpy legs but there are no spines on the back. Oddly the anus (arrow) is situated on the dorsal surface

Above: Toothed hypostome of the larva of the sheep tick *Ixodes ricinus,* situated between the palps on either side

IS IT A PARASITIC MITE? IS IT A TICK?

There are several types of mites which are normally free-living in the environment but which may be opportunistic on the skin, foraging for bacteria, for example, in existing skin lesions. They may therefore sometimes be found in skin scrapings but they are not ectoparasites. If in doubt, examine the cuticle of the mite: ALL parasitic mites have a striated cuticle/thumbprint pattern on the dorsum, as shown below right; forage mites do not have this pattern, and they often have numerous, very long hairs (setae) protruding from the posterior end as shown below left.

Sometimes small larval ticks may be confused with blood-sucking mites. Absent in mites, all the parasitic stages of ticks possess a serrated structure called the 'hypostome' which is situated between then palps. Mites do not possess this attachment structure