ARTIFACTS THAT MY BE CONFUSED WITH MALARIA OR OTHER BLOOD PARASITES

Inexperienced microscopists may have difficulty in examining thin and especially thick film because of contaminating elements that can be accidentally present in stained samples. Such contaminating elements can be either bacteria, skin dirt, powder particles present on the slide, vegetable spores, yeast or moulds in the air; alternatively, they can be due to bacteria, moulds, protozoa or other contaminating substances present in the water used for sample staining. As already pointed out, it is necessary to pay a lot of attention in making thin and thick blood films: slides should be perfectly clean and preserved in closed cases to avoid any contamination; furthermore, the water used for stain dilution should be preserved in well stopped containers in order to avoid a plentiful development of moulds and bacteria. Artifacts are usually superimposed on the preparation and, at microscopical examination, they can be refracting or positioned on a different focal plan. Sometimes it is possible to observe some reddish granules without the presence of cytoplasm and, even if some of these might be remnants of malarial parasites, their presence alone is not sufficient to consider the sample as positive. Platelets are probably the artifacts that are more commonly mistaken for malarial parasites: they can be identified as trophozoites when superimposed on red blood cells, confused with schizonts when clumped, or mistaken for merozoites or other parasitic stages when free. Even though platelets can have very heterogeneous shape and size, they do hardly display a real likeness with malarial parasites.

As a general rule, ......................
Fig. 433: Right: it's difficult to make a correct diagnosis of this enlarged, oval shaped platelet. Compare with a gamocyte of *P. ovale* (left) where malarial pigment is concentrated towards the periphery of the organism. G. St.

Fig. 434: Left: a *P. malariae* gamocyte with eccentric nucleus and diffuse pigment; right: an enlarged, round shaped platelet. G. St.

Fig. 435: Left: a cluster of merozoites may be misidentified as a mature schizont of *P. malariae*. Compare with a mature schizont of *P. malariae* (right): each merozoite displays visible nucleus and cytoplasm. G. St.

Fig. 436: Pyknotic nuclei in a leukocyte (karyorrhexis and karyolysis) probably due to a prolonged contact with EDTA; these forms should not be confused with merozoites of a mature schizont. G. St.
Fig. 441: A filamentous mycelium (left) may be easily confused with a microfilaria (right) when observed isolated and at the same length and width. G. St.

Fig. 442: This artifact may be confused with a malaria trophozoite, however, focusing reveals the apparent red dot of chromatin as something superimposed on the RBC and the blue cytoplasm as dye deposits. G. St.

Fig. 443: A large Howell-Jolly body in a RBC with basophilic stippling. M.G.G. St.

Fig. 444: Babesia microti. RBCs infected by small sized trophozoites that closely resemble the early ring forms of P. falciparum. G. St.