Plasmodium vivax [40][49][54]

Causative agent of benign tertian fever (fever on the first day, remission of fever on the second, return of fever on the third). Like *P. ovale* this species will cause frequent relapses, due to the presence of liver hypnozoites, if the infection is not correctly treated with a hepatic schizonticidal drug (Primaquine). Two forms of this species are known and their period of incubation differs:
- The classic form associated with warm or temperate climates, whose period of incubation varies from 15 days to several weeks [19].
- A cold climate form with a period of incubation lasting up to 8-10 months, reported in Russia and North Korea. This form of *P. vivax* (Nicolaev strain, *P. vivax* hibernans) has adapted to the changing of seasons; i.e. during the wintertime, when activity of the vector (mosquito) is suppressed, it remains in the form of a liver hypnozoite (Plate 8).

Parasitized red blood cells
They are generally young red blood cells (reticulocytes) [46].
Size: increased; this is the species that can induce the biggest changes.
Shape: round or, more often, quadrangular, trapezoidal, polygonal.
Schüffner's stippling: small red-pink granules evenly distributed throughout the part of the red blood cell not occupied by the parasite, also present in erythrocytes parasitized by *P. ovale*,.....

Plasmodium vivax [40][49][54]

Agente della febbre terzana benigna (primo giorno febbre, secondo giorno remissione della febbre, terzo giorno febbre). In questa specie è frequente la comparsa di recidive come in *P. ovale*, per la presenza di ipnozoiti epatici, se l'infezione non viene trattata correttamente con un farmaco schizonticida epatico (Primachina). Si conoscono due forme di questa specie con un periodo di incubazione diverso:
- La forma classica delle zone calde o temperate con un periodo di incubazione variabile da 15 giorni a diverse settimane [19].
- Una forma con incubazione prolungata sino a 8-10 mesi, tipica dei paesi freddi, segnalata in Russia e Corea del Nord. In questa forma (ceppo Nicolaev, *P. vivax* hibernans), *P. vivax* si è adattato all'alternanza delle stagioni, trascorre cioè sotto forma di ipnozoita epatico il periodo invernale quando l'attività del vettore (zanzara) è soppressa (Tavola 8).

Globuli rossi parassitati
Sono in genere globuli rossi giovani (reticolociti) [46].
Dimensione: aumentata, questa è la specie in grado di produrre le maggiori variazioni.
Forma: rotonda, ma più spesso quadrangolare, trapezoidale, poligonale.
Granulazioni di Schüffner: sono piccoli granuli di colore rosso-rosa distribuiti in maniera uniforme su tutta la zona del globulo rosso non occupata dal parassita, presenti anche in *P. ovale* .....

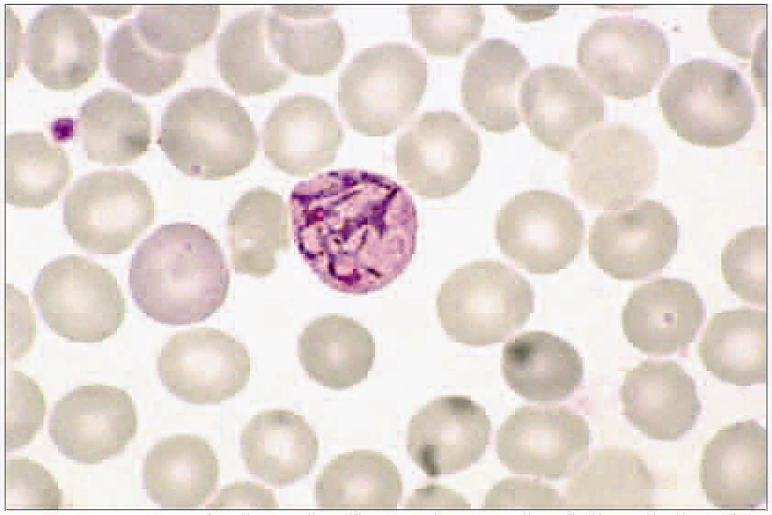

Fig. 157: *P. vivax*. A very enlarged RBC infected by two trophozoites with markedly amoeboid cytoplasm. Schüffner's stippling is seen. M.G.G. St.

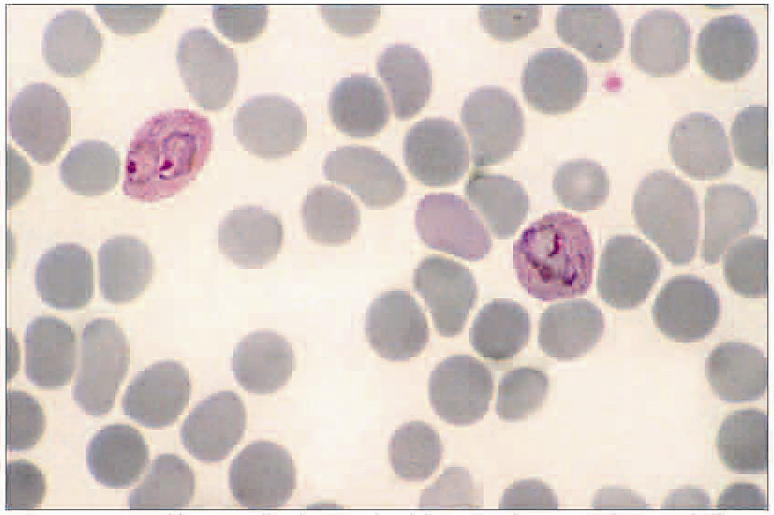

Fig. 158: *P. vivax*. Left: a very enlarged RBC infected by two trophozoites; right: a RBC holding a parasite with amoeboid cytoplasm and abundant pigment. Schüffner's stippling is seen. M.G.G. St.

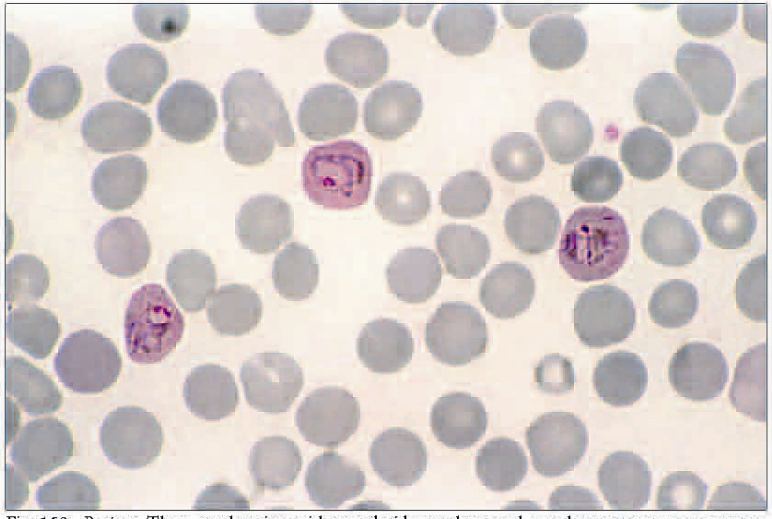

Fig. 159: *P. vivax*. Three trophozoites with amoeboid cytoplasm and very heterogeneous appearance. Schüffner's stippling is seen. M.G.G. St.

Fig. 160: *P. vivax*. An enlarged RBC infected by a marginal form trophozoite with pigment. Schüffner's stippling is seen. G. St.

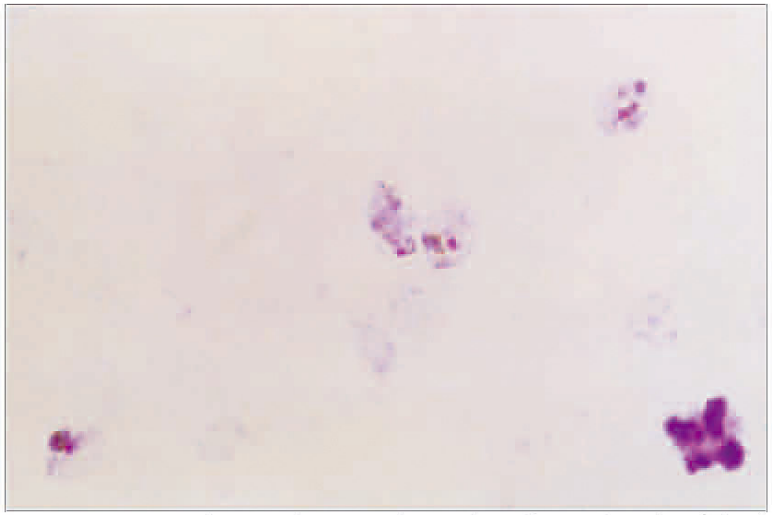

Fig. 225: *P. vivax*. Four trophozoites with prominent chromatin dot and fragmented cytoplasm. "Ghosts" of infected RBCs are seen. Right below, a neutrophil. Thick film. G. St.

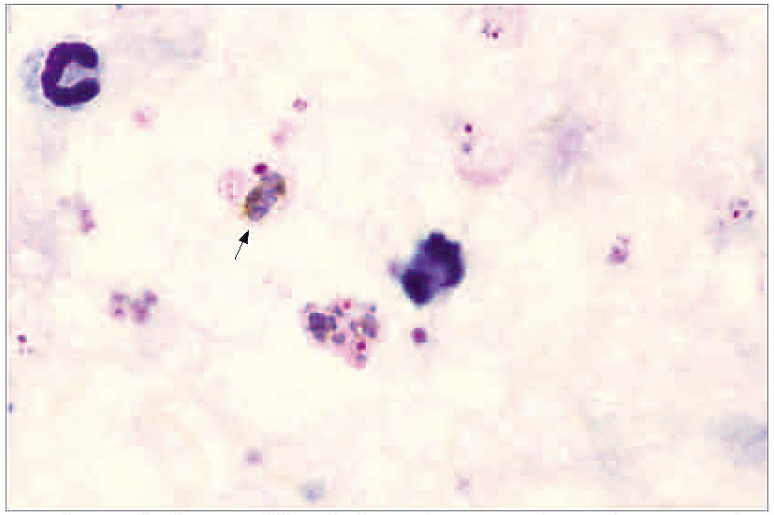

Fig. 226: *P. vivax*. Trophozoites at different developmental stages, young forms and a more mature form with visible pigment (►). In the middle, a schizont with two nuclei. Thick film. G. St.

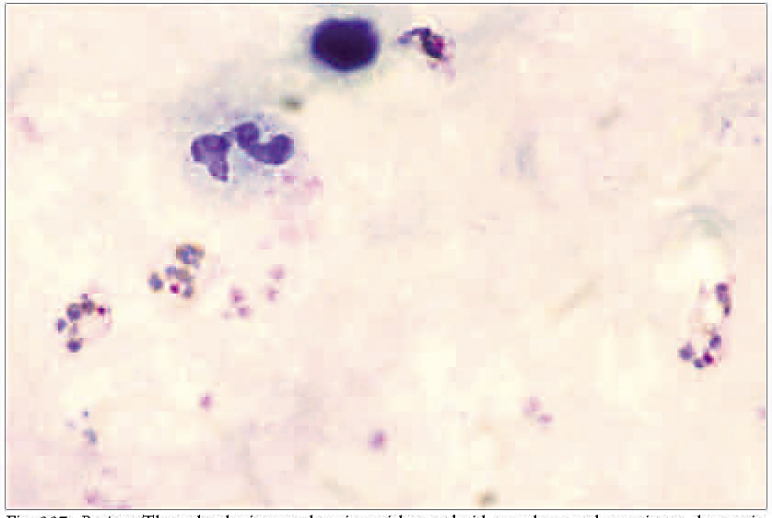

Fig. 227: *P. vivax*. Three developing trophozoites with amoeboid cytoplasm and prominent chromatin dots. Thick film. G. St.

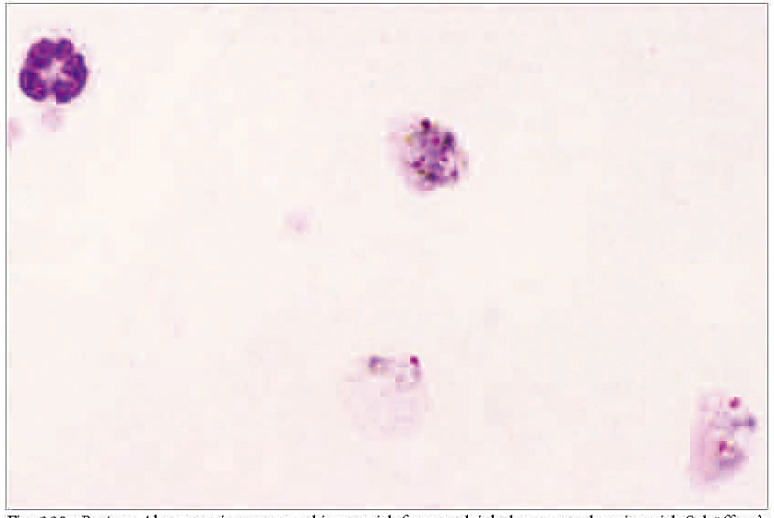

Fig. 228: *P. vivax*. Above: an immature schizont with four nuclei; below: a trophozoite with Schüffner's stippling visible in the "ghost" of the infected RBC; right: a trophozoite with two chromatin dots. Thick film. G. St.