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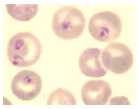
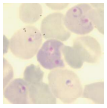
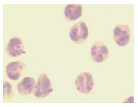
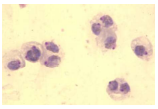
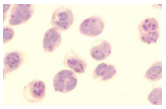
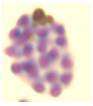
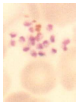
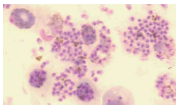
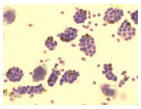
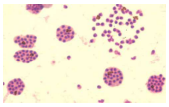
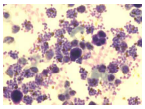
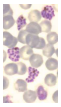
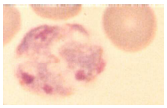
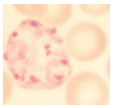
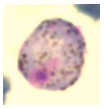
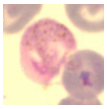
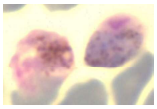
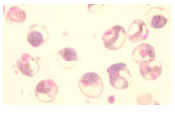
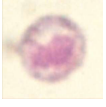
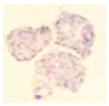
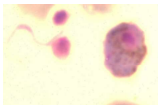
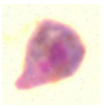
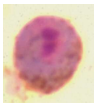
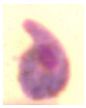
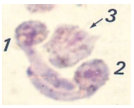
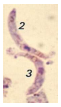
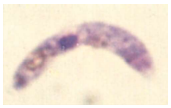
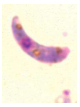
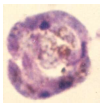
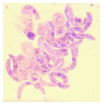
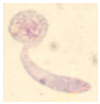
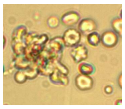
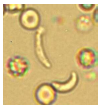
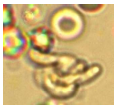
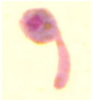
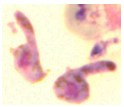
Ring-form	 1	 2	
Trophozoite	 1	 2	
Schizont	 1	 2	 3
	 4	 5	 6
	 7	 8	
Infected RBC	 1	 2	
Gametocyte	 1	 2	 3
	 4	 5	

Gamete	 1		
Zygote	 1	 2	 3
Ookinete	 1	 2	 3
	 4	 5	 6
	 7	 8	 9
	 10	 11	 12
	 13	 14	

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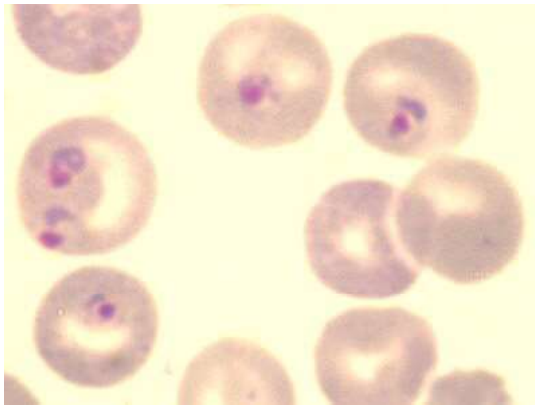
Ring-forms 1



Ringforms from a synchronized infection in vivo, 4 hours after invasion. Giemsa staining.

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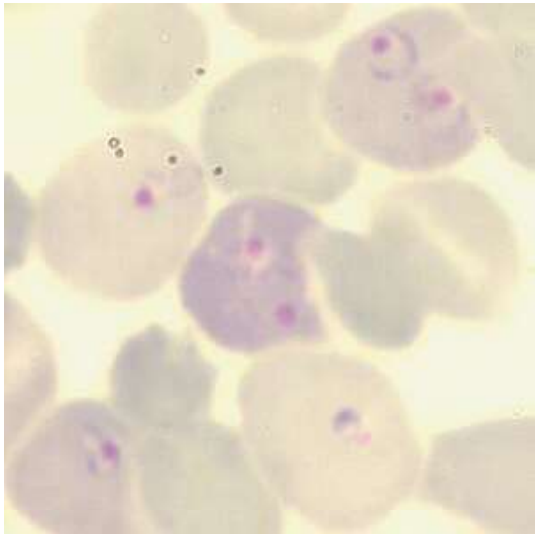
Ring-forms 2



Ringforms from a synchronized infection *in vivo*, 4 hours after infection. Note the preference of invasion in reticulocytes (larger and blue staining erythrocytes). Reticulocytosis was induced by phenylhydrazine treatment. Giemsa staining.

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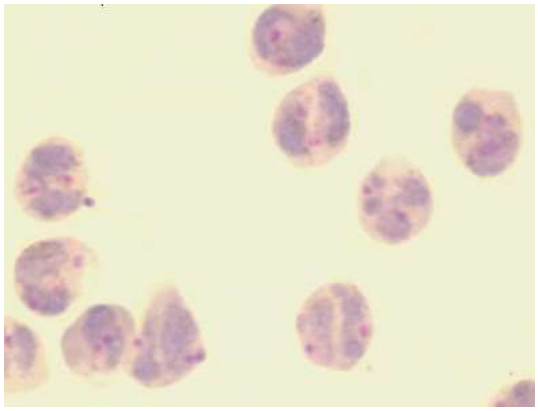
Trophozoites, 'mature', purified 1



Trophozoites, 'mature', purified, 16 hours after invasion, just before nuclear division starts. These trophozoites are purified from a synchronous blood stage infection using Nycodenz density gradient purification. In this infection many double and triple infected reticulocytes are present. In double infected erythrocytes, the parasites develop normally into mature schizonts. Giemsa staining.

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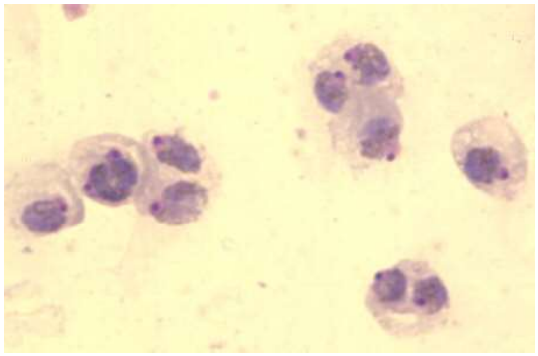
Trophozoites, 'mature', purified 2



Trophozoites, 'mature', purified, 14-16 hours after invasion, just before nuclear division starts. These trophozoites are purified from a synchronous blood stage infection using Nycodenz density gradient purification. The irregular shape of the erythrocytes is the result of slide preparation after Nycodenz density gradient purification. Giemsa staining.

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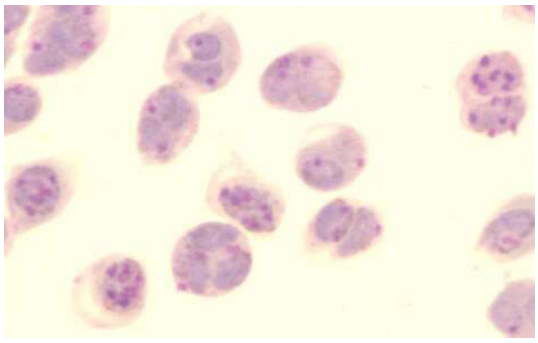
Schizonts, immature and trophozoites



Schizonts, immature and trophozoites, 'mature' (16-18 hours after invasion). Giemsa staining.

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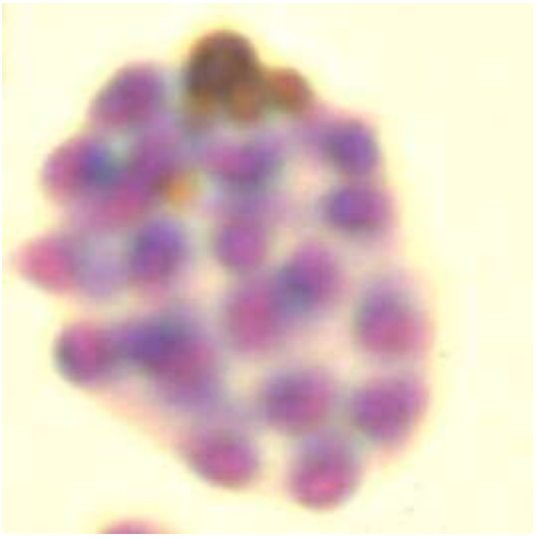
Schizont, mature



Schizont, mature. Note the large brown-yellow pigment cluster and the 18 merozoites. Usually schizonts contain between 12 and 24 merozoites. Giemsa staining.

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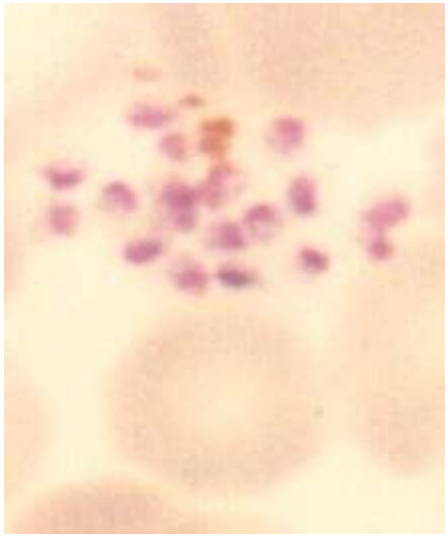
Schizont, ruptured, in vitro



Schizont, ruptured, *in vitro*

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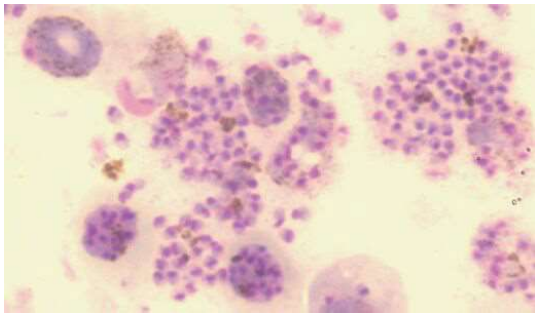
Schizonts, mature, purified 1



Schizonts, mature, purified from *in vitro* cultures by Nycodenz density gradient centrifugation. Schizonts of *P. berghei* do not burst spontaneously in *in vitro* cultures, allowing for easy purification and collection of mature schizonts. The merozoites are viable and have been used for establishment of synchronous infections, transfection and invasion studies. Note the presence of (immature) gametocytes, which always co-purify with schizonts. Giemsa staining.

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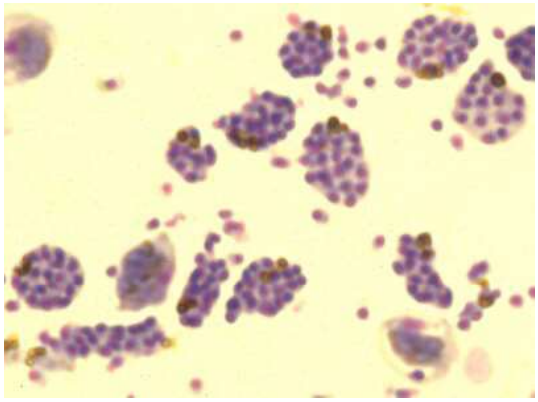
Schizonts, mature, purified 2



Schizonts, mature, purified from *in vitro* cultures by Nycodenz density gradient centrifugation. Schizonts of *P. berghei* do not burst spontaneously in *in vitro* cultures, allowing for easy purification and collection of mature schizonts. The merozoites are viable and have been used for establishment of synchronous infections, transfection and invasion studies. Note the presence of (immature) gametocytes, which always co-purify with schizonts. Giemsa staining.

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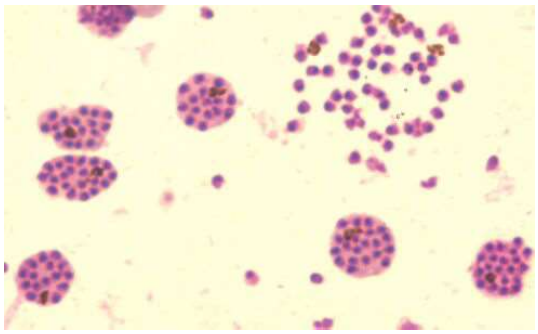
Schizonts, mature, purified 3



Schizonts, mature, purified from *in vitro* cultures by Nycodenz density gradient centrifugation. Schizonts of *P. berghei* do not burst spontaneously in *in vitro* cultures, allowing for easy purification and collection of mature schizonts. The merozoites are viable and have been used for establishment of synchronous infections, transfection and invasion studies. Schizonts shown here are from a non-gametocyte producer clone of *P. berghei*. Giemsa staining.

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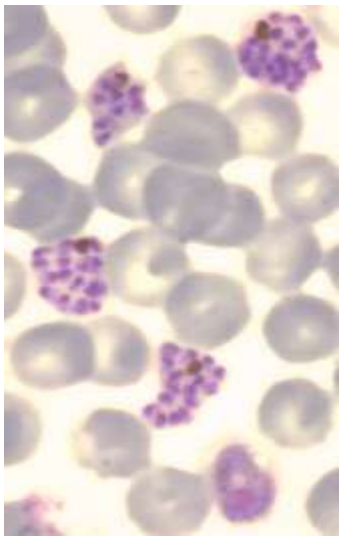
Schizonts, mature



Schizonts, mature. And female gametocyte, *in vitro* culture, giemsa staining.

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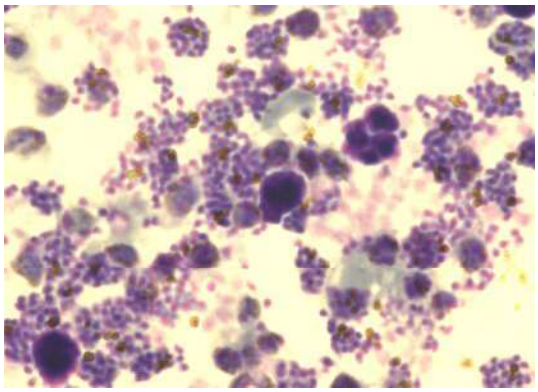
Purified schizont



Schizonts, mature, purified from *in vitro* cultures by Nycodenz density gradient centrifugation. Schizonts of *P. berghei* do not burst spontaneously in in vitro cultures, allowing for easy purification and collection of mature schizonts. This is a typical preparation which is used for transfection. Note the presence of contaminating leucocytes which are not removed for transfection studies. Giemsa staining.

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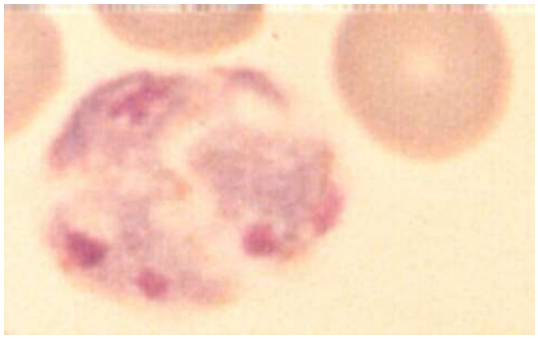
Multiple infected erythrocyte 1



Multiple infected erythrocyte containing three 'mature trophozoites', two of which just started nuclear division containing two nuclei (immature schizonts). Giemsa staining.

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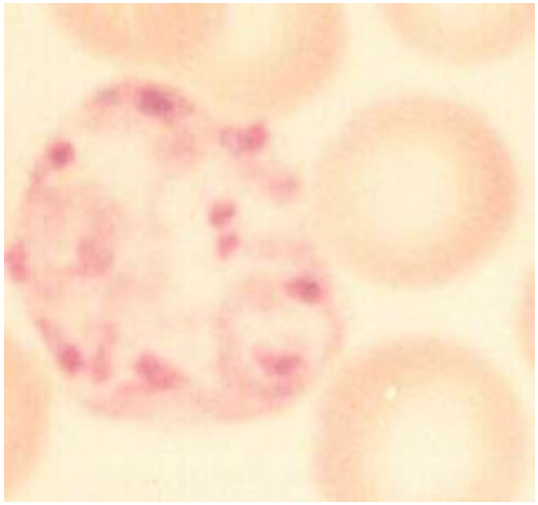
Multiple infected erythrocyte 2



Multiple infected erythrocyte containing a number of rings/young trophozoites. Reticulocytes can be invaded simultaneously by more then 8 merozoites. Erythrocytes containing 2 parasites will allow normal development into mature schizonts. When more than 3 parasites are present, development is often aborted.

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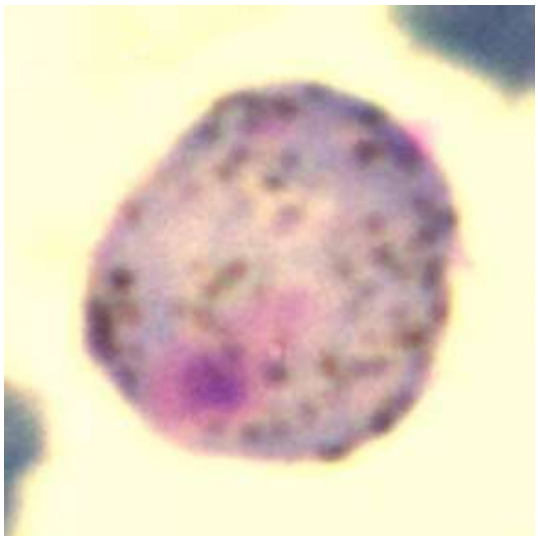
Gametocyte, female, mature



Gametocyte, female, mature, intracellular. Note the eccentric (compact) nucleus, scattered pigment granules and blue staining cytoplasm. The gametocyte is completely filling its host cell and the membrane of the erythrocyte is hardly visible. Giemsa staining.

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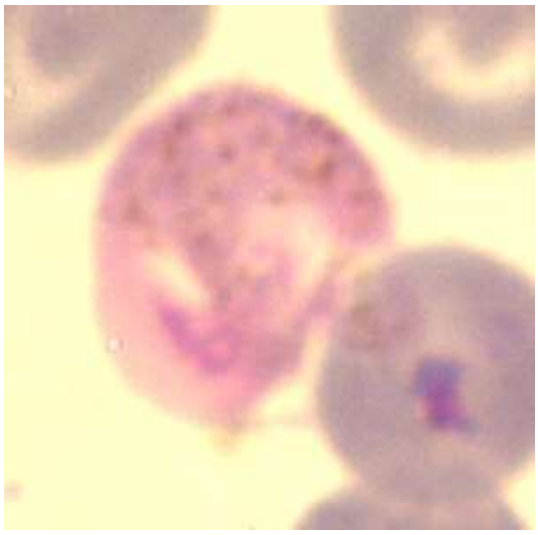
Gametocyte, male, mature



Gametocyte, male, mature, intracellular, Note the large nucleus (red DNA spot in a large pink areola) at the edge of the cell, scattered pigment granules and the pink staining cytoplasm (compare with the cytoplasm of the young trophozoite). The pink color (compared to the blue cytoplasm of female gametocytes/trophozoites) is the result of the less basic pH of the male cytoplasm, most probably due to the much lower number of ribosomes. The vacuolar appearance of the cytoplasm of this gametocyte may be due to preparation of the slide. Giemsa staining.

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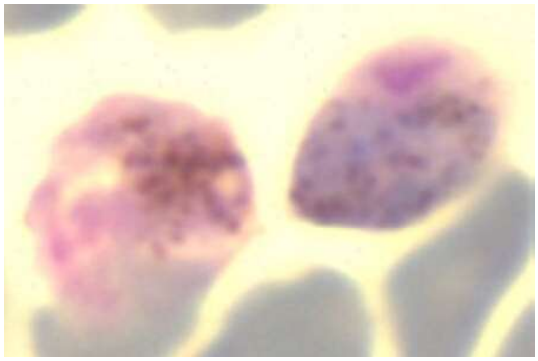
Gametocyte, immature male and mature male



Gametocyte, immature male and mature male. Immature males (20-26 hours after invasion of erythrocytes) resemble (im)mature female gametocytes because of their blue staining cytoplasm and therefore are difficult to distinguish from females. In this case the large nucleus with the pink areola indicates that the blue gametocyte is a young male. Giemsa staining.

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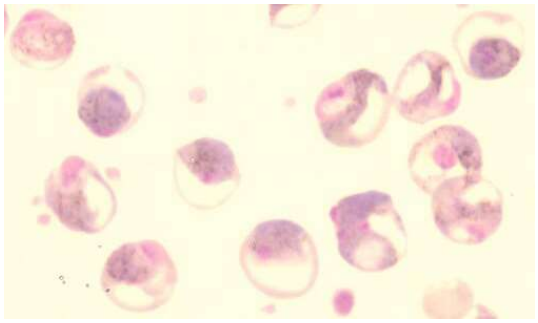
Gametocyte, male/female, immature, purified



Gametocytes, male/female, immature, purified (24-27 hours after invasion). These gametocytes are purified from synchronous blood stage infections using Nycodenz density gradient purification. This picture is shown to give a impression of the purity of the preparations (as a result of purification and method of slide preparation the detailed morphological characteristics are less clear). Giemsa staining.

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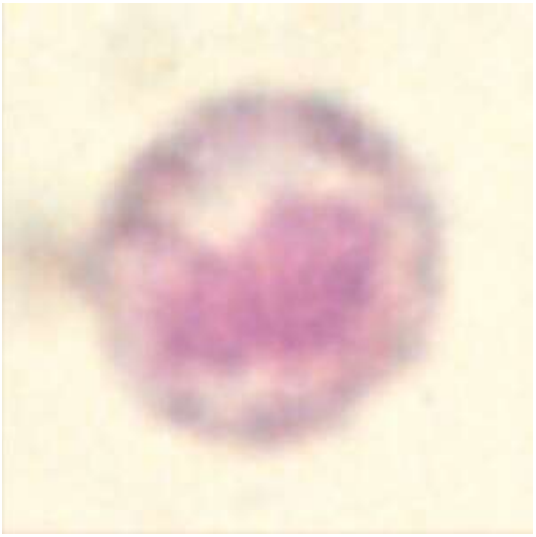
Gametocyte, male, activated



Gametocyte, male, activated, extracellular, 8 minutes after induction of gametogenesis. After induction of gametogenesis by a drop in temperature from 37C to 21 C and a rise in pH from 7.3 to 8.0 the morphology of female gametocytes do not change drastically except that they escape from their host erythrocyte. In the male gametocytes the nucleus enlarges and migrates to the 'middle' of the parasite. After 7-10 min. the nucleus is centrally located, enlarged, rounded off and surrounded by a narrow rim of cytoplasm (see picture). The nucleus is strongly staining as a result of an increase of the DNA content to eight times the haploid value. Exflagellation starts around 11 min. after induction. Giemsa staining.

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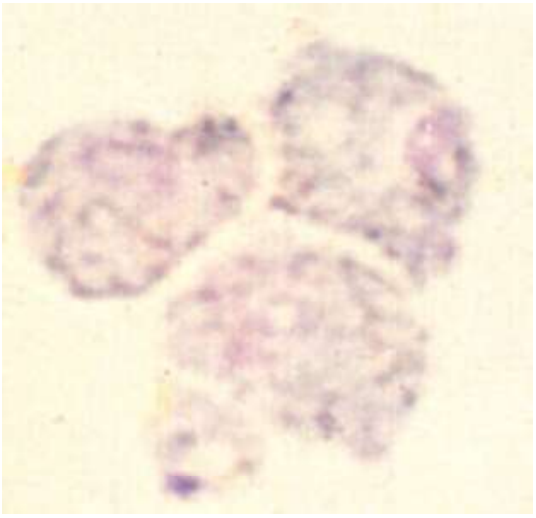
Gametes, female, unfertilized



Gametes, female, unfertilized, present in ookinete cultures 16 hour after induction of gametogenesis. Note the irregular shape of the extra-cellular gamete and its vaguely stained nucleus. Giemsa staining.

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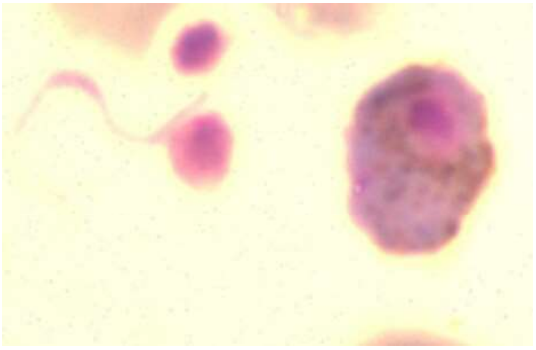
Zygote, male gamete



Zygote, 2h after fertilisation, male gamete (and two platelets), *in vitro*.

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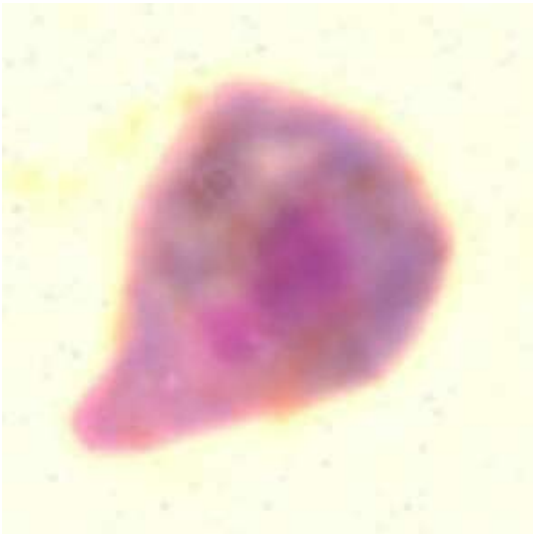
Zygote, 1-3h after fertilization 1



Zygote, 1-3hours after fertilization (stage I ookinetes). Zygotes, round or oval shaped, have a more condensed appearance and are somewhat smaller then female gametes. They have a darker red staining, more extended nucleus. Within 10-60 minutes after induction of gametogenesis zygotes can be observed with two nuclei, just before fusion of the male and female nucleus. Between 2 and 3 hour after fertilization DNA synthesis occurs in the nucleus of the zygote, up to the tetraploid value, coinciding with meiosis. Giemsa staining.

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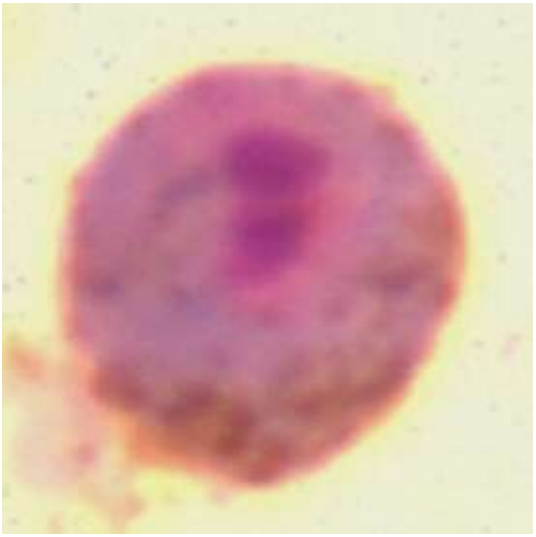
Zygote, 1-3h after fertilization 2



Zygote, 1-3hours after fertilization (stage I ookinetes). Zygotes, round or oval shaped, have a more condensed appearance and are somewhat smaller then female gametes. They have a darker red staining, more extended nucleus. Within 10-60 minutes after induction of gametogenesis zygotes can be observed with two nuclei, just before fusion of the male and female nucleus. Between 2 and 3 hour after fertilization DNA synthesis occurs in the nucleus of the zygote, up to the tetraploid value, coinciding with meiosis. In the zygote shown the male and female nuclei have not been fused yet. Giemsa staining.

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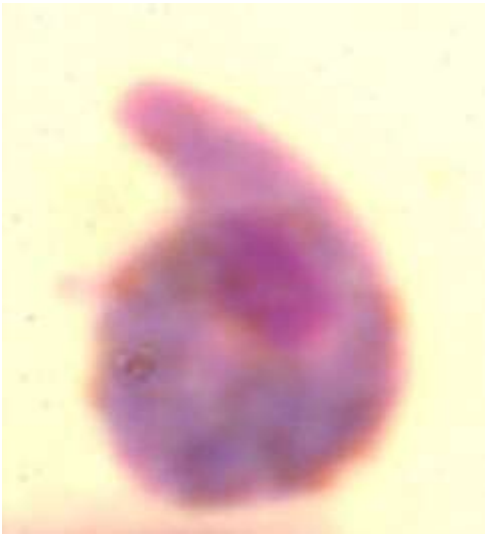
Ookinete (stage II)



Ookinete (stage II). A protrusion emerges from zygotes resembling stage I, filled with blue staining cytoplasm without pigment granules.

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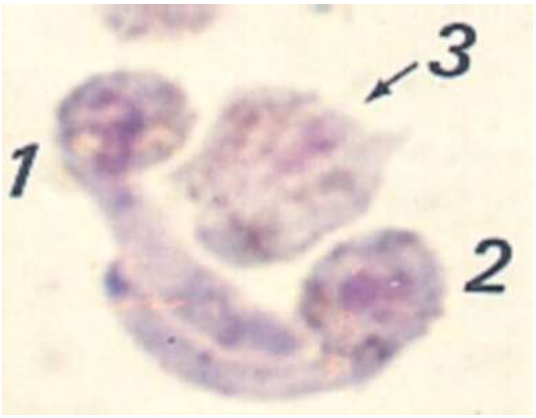
Ookinete (stage II)



Ookinete (stage II). A protrusion emerges from zygotes resembling stage I, filled with blue staining cytoplasm without pigment granules.

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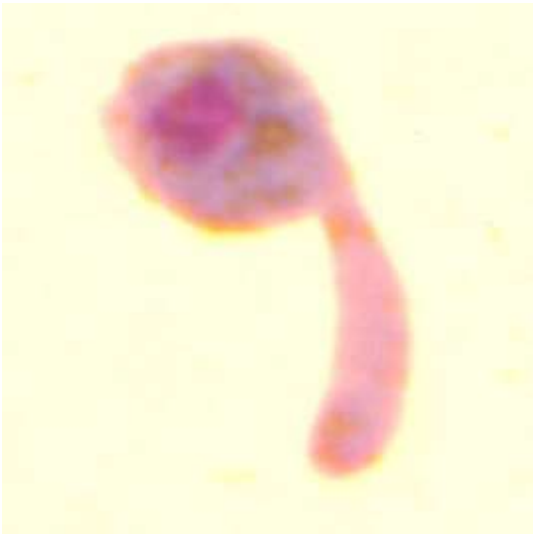
Ookinete (stage III)



Ookinete stage III, *in vitro*, 8 hours after fertilization.

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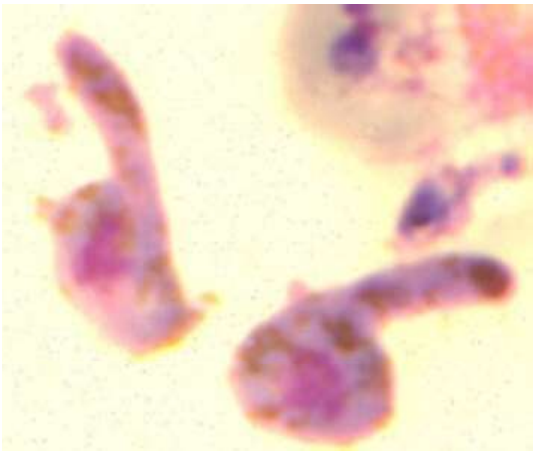
Ookinete (stage III)



Ookinete stage III, *in vitro*, 8 hours after fertilization.

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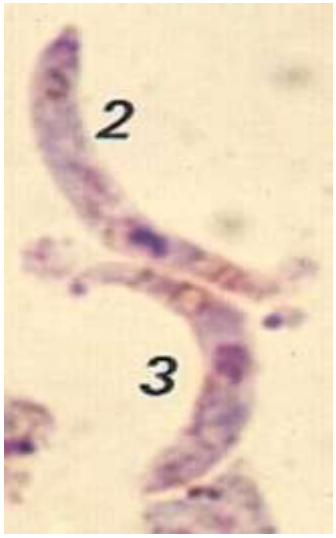
Ookinete (stage IV, V) 1



Ookinete stage IV (no. 2) and stage V (no.3). First stage with round posterior end (banana-shaped). Nucleus migrates from the posterior end to the middle of the parasite. Dense pigment nucleus at one or both sides of the nucleus. Giemsa staining.

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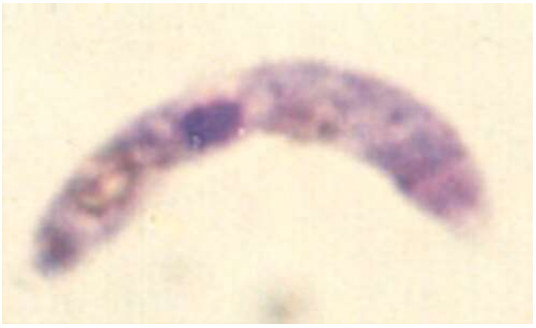
Ookinete (stage IV, V) 2



Ookinete stage IV (no. 2) and stage V (no.3). First stage with round posterior end (banana-shaped). Nucleus migrates from the posterior end to the middle of the parasite. Dense pigment nucleus at one or both sides of tOokinete (stage IV, V). First stage with round posterior end (banana-shaped). Nucleus migrates from the posterior end to the middle of the parasite. Dense pigment nucleus at one or both sides of the nucleus. Giemsa staining. nucleus. Giemsa staining.

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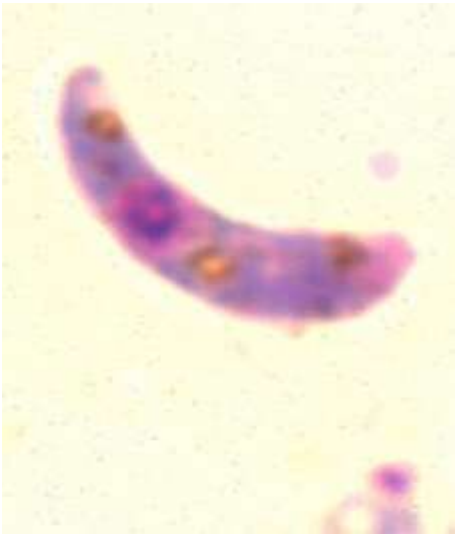
Ookinete, mature (stage VI)



Ookinete, mature (stage VI). These ookinetes resemble stage V ookinetes but the anterior end is enlarged and stains pink to red. Note the small, haploid nucleus of the trophozoite in comparison with the enlarged 'tetraploid' nucleus of the ookinete. Giemsa staining.

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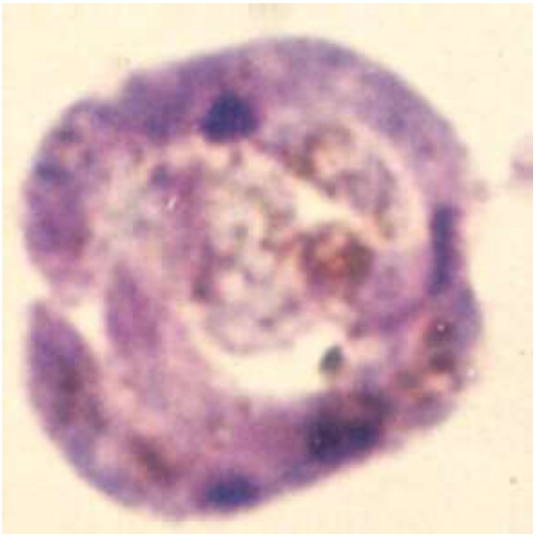
Ookinete, (stage V, VI)



A cluster of mature ookinetes (stage V, VI) from *in vitro* cultures.

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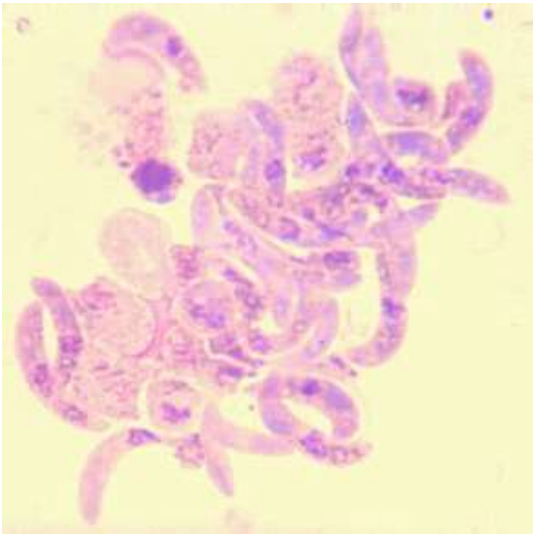
Okinete, (stage V, VI)



A cluster of mature ookinetes (stage V, VI) from *in vitro* cultures.

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Ookinetes, degenerated (no. 2) and stage IV (no. 1)

Ookinetes, degenerated (no. 2) and stage IV (no. 1). Nucleus in the bulbous posterior end of the degenerated ookinete. These parasites show often a constriction between the bulbous posterior end and the (light-blue) protrusion and are fragile.

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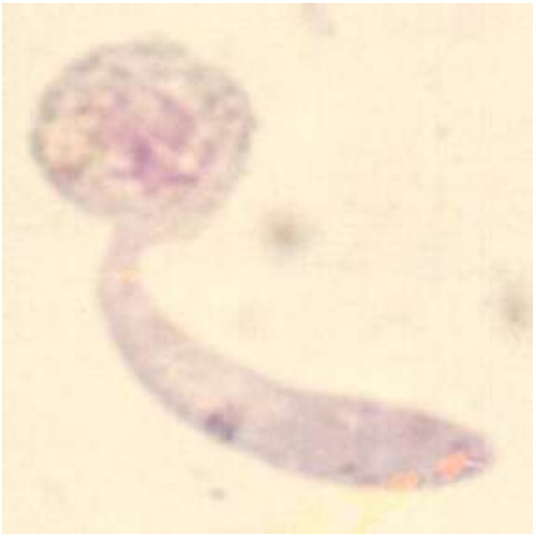
Ookinete, degenerated



Ookinete, degenerated. Nucleus in the bulbous posterior end. These parasites show often a constriction between the bulbous posterior end and the (light-blue) protrusion and are fragile.

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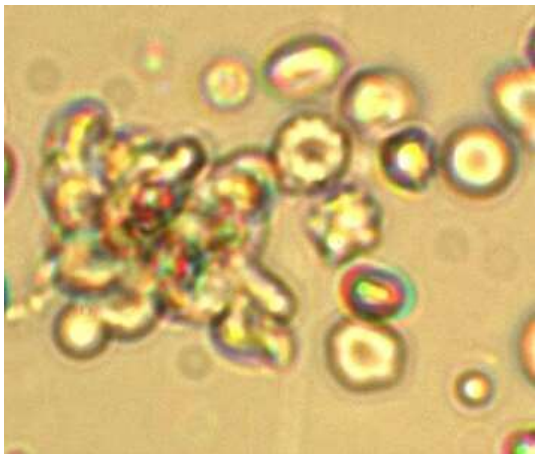
Ookinete, live, mature, cluster



Ookinetes, live. A large cluster of mature ookinetes and unfertilized female gametes in a cell-counter. Ookinetes are obtained from in vitro cultures. Ookinetes often form clusters.

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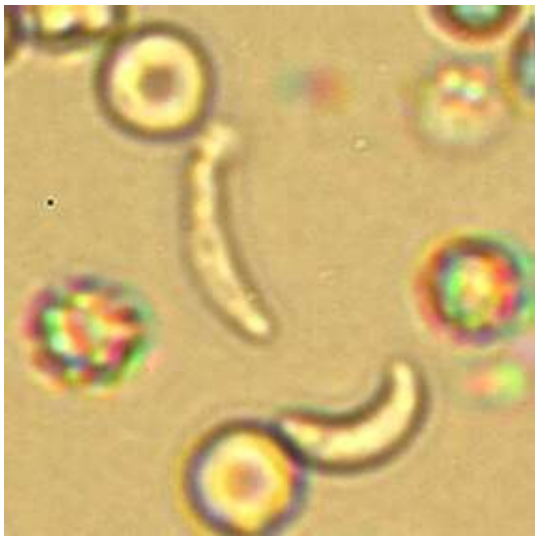
Ookinete, live, mature, degenerated



Ookinete, live. One mature and a degenerated ookinete in a cell-counter.
Ookinetes are obtained from in vitro cultures.

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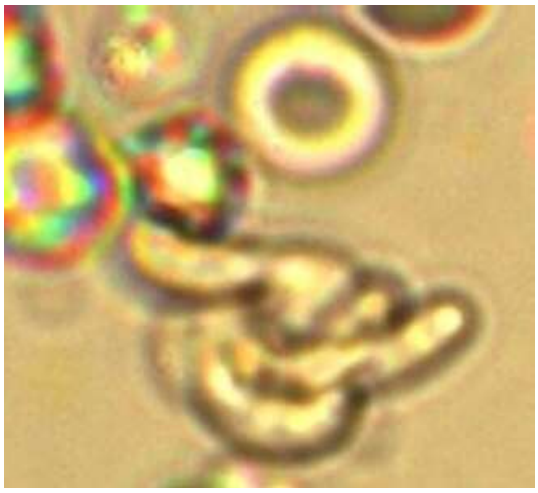
Ookinete, live, mature, small cluster



Ookinetes, live. A small cluster of mature ookinetes in a cell-counter.
Ookinetes are obtained from in vitro cultures. Ookinetes often form clusters.