
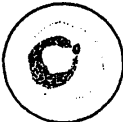
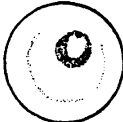
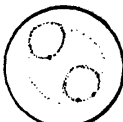

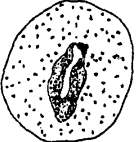



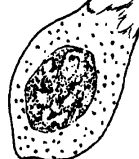



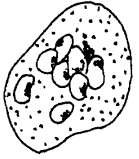
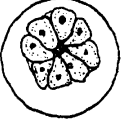
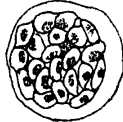

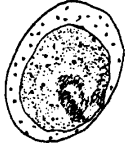





Key Morphological Differences Between Human Plasmodium Species in Blood Smears

	vivax	ovale	malariae	falciparum
Ring Stage				
Trophozoite				
Schizont				
Segmenter				
Gametocytes				
				 sequestered

The ring forms of all four species are very similar and difficult to distinguish. *P. falciparum* rings tend to be a little smaller and more numerous than the other species. The presence of a large number of rings in the absence of more mature stages, as well as multiply-infected erythrocytes, is highly suggestive of *P. falciparum*. Erythrocytes infected with *P. vivax* and *P. ovale* are enlarged and exhibit Schüffner's dots as the rings mature into trophozoites. The trophozoites of *P. vivax* are often ameboid, whereas *P. ovale* tends to be more compact. The *P. malariae* trophozoite is very compact and the host erythrocyte is not enlarged. Mature asexual forms of *P.*

falciparum are rarely found in the peripheral circulation. The typical number of merozoites produced per schizont is: *P. vivax* 14-20 (up to 24), *P. ovale* 6-12 (up to 18), *P. malariae* 8-10 (up to 12), and *P. falciparum* 16-24 (up to 36). *P. falciparum* exhibits crescent-shaped gametocytes whereas the other species are all round to oval. *P. vivax* and *P. ovale* gametocytes are in enlarged erythrocytes with Schüffner's dots and are difficult to distinguish from each other. *P. malariae* gametocytes do not modify the host erythrocyte. Gametocytes can be distinguished from trophozoites by their large size (nearly filling the erythrocyte) and a single nucleus. Mature microgametocytes tend to stain lighter than macrogametocytes and have a more diffuse nucleus.