

# From the Fifth to the Seventh Human Malarial Species: A New Concern in Infectious Medicine

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Dear Editor,

Malaria, a parasitic infection caused by *Plasmodium* spp., is a global public health threat. In humans, four species of malarial parasites are well known: *Plasmodium vivax*, *P. falciparum*, *P. ovale*, and *P. malariae*. Within the past decade, there are new emerging human malarial species, and this becomes a very interesting issue in malariology. The fifth malarial species, *P. knowlesi*, which was first reported in Southeast Asia, has become a worldwide public health concern (1). Many cases of *P. knowlesi* malaria have been reported in travelers returning from Southeast Asia (2). In 2014, the sixth malarial species, *P. cynomolgi*, was identified in Southeast Asia, with a single case reported in Malaysia (3). Malaria caused by *P. cynomolgi* is very difficult to differentiate from that caused by *P. vivax* (3). In 2015, Lalremruata et al. (4) reported the seventh human malarial species, *P. brasilianum*, this time in South America. Similar to malaria caused by *P. cynomolgi*, malaria caused by *P. brasilianum* cannot be easily differentiated from classical human malaria by a blood smear. There are also no differences in the clinical presentations. Thus, identification depends on the use of molecular diagnostic methods. Based on 18S rRNA gene sequencing, Lalremruata et al. (4) identified 12 patients harboring malaria parasites, which were

100% identical to those of *P. brasilianum* isolated from the monkey *Alouatta seniculus*. Indeed, *P. brasilianum* malaria is important monkey malaria, and the chance for human cross-species infection had already been highlighted (3). Of interest, other carriers of malaria, such as the monkeys *P. eylesi*, *P. inui*, *P. schwetzi*, and *P. simium*, provide an opportunity for cross-species infection. Surveillance and studies of these species for possible new human infections are recommended.

## References

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