

1370 longer-lived sexual forms (*gametocytes*) that can transmit malaria. In falciparum malaria, a delay of several asexual cycles precedes this switch to gametocytogenesis.

After being ingested in the blood meal of a biting female anopheline mosquito, the male and female gametocytes form a zygote in the insect's midgut. This zygote matures into an ookinete, which penetrates and encysts in the mosquito's gut wall. The resulting oocyst expands by asexual division until it bursts to liberate myriad motile sporozoites, which then migrate in the hemolymph to the salivary gland of the mosquito to await inoculation into another human at the next feeding.

EPIDEMIOLOGY

Malaria occurs throughout most of the tropical regions of the world (Fig. 248-2). *P. falciparum* predominates in Africa, New Guinea, and Hispaniola (i.e., the Dominican Republic and Haiti); *P. vivax* is more common in Central America. The prevalence of these two species is approximately equal in South America, the Indian subcontinent, eastern Asia, and Oceania. *P. malariae* is found in most endemic areas, especially throughout sub-Saharan Africa, but is much less common. *P. ovale* is relatively unusual outside of Africa and, where it is found, comprises <1% of isolates. Patients infected with *P. knowlesi* have been

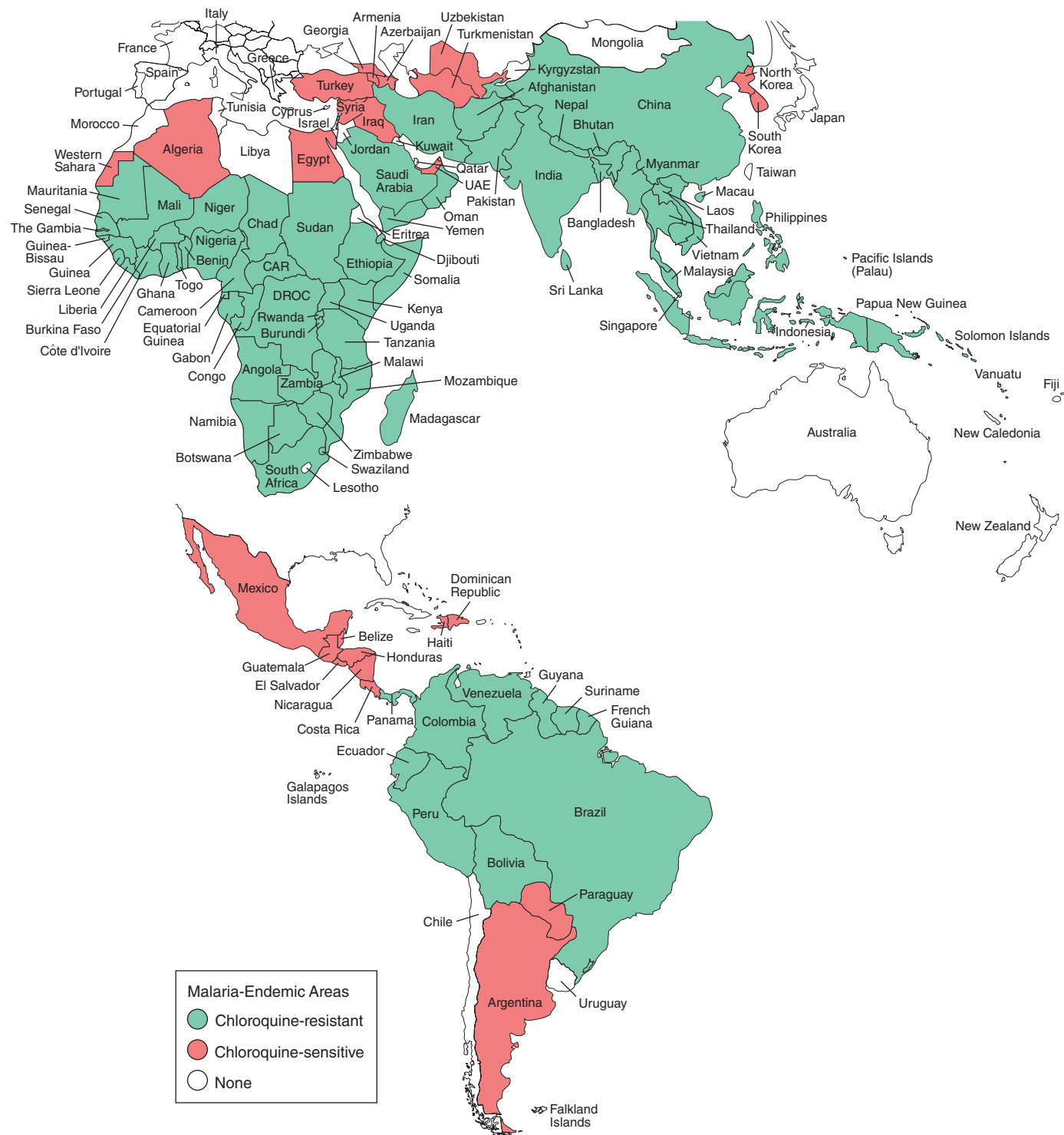


FIGURE 248-2 Malaria-endemic countries in the Americas (*bottom*) and in Africa, the Middle East, Asia, and the South Pacific (*top*), 2007. CAR, Central African Republic; DROC, Democratic Republic of the Congo; UAE, United Arab Emirates. Several countries in the Americas, the Middle East, and North Africa are close to eliminating malaria.