**ABSTRACT.** Although *Phlebotomus argentipes* as the only known vector of visceral leishmaniasis (VL) is zoophilic in nature, VL is considered to be anthropoontic in the Indian subcontinent. Peripheral blood samples from 85 stray dogs were examined for any molecular evidence of *Leishmania* infection in VL endemic areas of Bangladesh. Parasite DNA was detected in a blood sample from 1 of 85 (1.2%) stray dogs using ITS1-PCR, and PCR sequencing of the rRNA-ITS and cytochrome *b* gene confirmed that the parasitic DNA was *Leishmania donovani*. The results support the assumption that dogs are a probable animal reservoir for the *Leishmania* parasite in Bangladesh. It will be important to investigate the possible epidemiological role of dogs in domestic foci of VL endemic areas in Bangladesh.

**KEY WORDS.** Bangladesh, canine, *Leishmania donovani*, PCR, visceral leishmaniasis.

tion fragment length polymorphism (RFLP) analysis was performed with the positive PCR product using restriction enzyme HaeIII. The restriction products were then separated using a 3% agarose gel to identify the species of *Leishmania*. To confirm the species of *Leishmania*, the rRNA ITS region was sequenced after amplification using nested PCR with a pair of outer primers (RI1, 5'-GCTGTAGGTGACCGATG-3', and RI2, 5'-GCGGGTAGCTGCCTGGCACAAC-3') [6] and then with a pair of inner primers (L.ITS-S, 5'-ATCATTTTCCGATGATTACA-3', and L.ITS-R, 5'-CTGTAACAAAGGTAGTTGTCG-3'). To further determine the species of *L. donovani*, the cytochrome b gene was sequenced after amplification using a pair of specific primers (L.cyt-AS, 5'-CGGAGAGRARGAAAGG-3', GCAGCAGCT-3').
amplicons (977 bp of rRNA ITS and 702 bp of cyt b gene) confirmed that this stray dog was infected with the L. donovani parasite. The presence of L. donovani DNA in the blood sample from a stray dog in our study supports the findings of a previous study in Sri Lanka [16], Sudan [11], and India [19]. In a more recent study in Nepal, Leishmania DNA was found in several domestic animals such as goats, cows and buffaloes from an endemic area several months after the active transmission season [4], but there was no evidence of Leishmania DNA in domestic cattle in Bangladesh, although the cattle were seropositive for leishmaniasis [1]. However, other domestic animals, such as goats, buffaloes and wild animal (foxes) remain to be investigated. In Asia and other parts of the world, dogs are the primary reservoir hosts of L. infantum, although canine infection is possible with L. donovani [8], the causative agent of human VL in the Indian subcontinent and East Africa. It has been documented in eastern Sudan that domestic dogs are an important reservoir host of L. donovani [11]. Results from our study suggest that dogs are a probable animal reservoir for L. donovani in this endemic focus. In order to clarify the existence of a potential transmission cycle with dogs as the reservoir, it is necessary to prove that these animals can transmit the parasite to the vector in nature.

It was concluded that the presence of Leishmania DNA in a single dog, is insufficient to incriminate dogs as a reservoir, and more studies are needed to reveal the exact role of dogs in L. donovani infection.

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