groups. Except March and April, mature male had higher fecal testosterone concentration ($p < 0.05$), this was especially apparent in May ($p < 0.01$). These results suggest that the EIAs are useful for measurement of fecal progesterone and testosterone of Hokkaido brown bears, and that sex and sexual maturity of individuals could be determined by the measurement of fecal progesterone and testosterone concentrations.

Development of serological test procedure to specify the endemic foci of tick-borne encephalitis and the seroepidemiological survey in Hokkaido.

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In October 1993, a human case of encephalitis was diagnosed as tick-borne encephalitis (TBE) in Kamiiso, Hokkaido. As transmission cycle of TBE virus was proven to exist in this area, TBE virus may be endemic not only at the area where a patient was found but also in other parts of Japan. To specify the location of TBE endemic foci, a seroepidemiological survey was performed among horses and dogs in Hokkaido and then wild rodents in the antibody-positive areas using neutralizing (NT) test. Furthermore, seroepidemiological survey was extended to human and cattle cases which were diagnosed as encephalitis. A possible exsistence of TBE virus in Hokkaido for many years was discussed by retrospective study using cattle sera collected in 1978. Results are summarized as follows :

1. Horse sera collected in 1992 and 1998 were examined by NT test. TBE specific antibody was detected in 8 (Shiribeshi, Hiyama, Hidaka, Nemuro and Oshima district) of 1,695 horse sera. Out of 193 dog sera, 18 sera collected in Shiribeshi and Oshima district had TBE specific antibodies.
2. Rodents were captured in the 6 positive areas revealed by the survey of horse and dog. TBE specific antibodies were detected in rodent sera collected from 5 areas including that where the TBE patient was found and neighboring towns. The results indicate that TBE virus has been endemic in the southern part of Hokkaido.
3. From the above results, TBE positive areas can be confirmed by testing horse or dog sera first and rodent sera later.
4. Although sera were collected from both human and cattle cases diagnosed as encephalitis in Hokkaido and Honshu, none of the sera were positive for TBE antibody.
5. No TBE positive sera were found in wild animals in Honshu.
6. Cattle sera collected in 1978 were tested, and one sample from Abashiri district was positive for TBE antibody. This result suggests that TBE virus may have been endemic in Hokkaido since at least 1978.