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DELTA REGIONAL PRIMATE RESEARCH CENTER, TULANE UNIVERSITY
APPLIED SCIENTIFIC RESEARCH CORPORATION OF THAILAND

COOPERATIVE RESEARCH PROGRAMME NO. 26

BREEDING AND BEHAVIOUR STUDIES ON PRIMATES

RESEARCH PROJECT NO. 26/1

EXPERIMENTAL PROPAGATION AND BEHAVIOUR STUDIES OF THE GIBBON

REPORT NO. 4

CONSERVATION OF GIBBONS IN NATURAL FORESTS

BY

GERSHON BERKSON

JOE T. MARSHALL, JR.

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ASRCT, BANGKOK 1968

not for publication

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EXPERIMENTAL PROPAGATION AND BEHAVIOUR STUDIES OF THE GIBBON

REPORT NO. 5

TRACKING GIBBONS IN FORESTS USING RADIO-TELEMETRY

BY

GERSHON BERKSON

BRUCE A. ROSS

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F O R E W O R D

In certain areas of medical research, the primates are required as experimental animals because of their close affinity to man. Gibbons are of particular significance for this purpose, but supplies of experimental animals are difficult to obtain. If gibbons could be bred in captivity in reasonable numbers, the unnecessary slaughter involved in capturing experimental animals in the jungle where the mother is killed to collect her baby could be avoided. Furthermore, a reservoir of breeding stock could be established to assist in nature conservation and restocking.

SEATO Medical Research Laboratory, the Delta Regional Primate Research Center (Tulane University, Covington; Louisiana, U.S.A.) and ASRCT have been associated in a programme of research to study the breeding of gibbons in captivity and also the behaviour of gibbons in natural and artificial conditions.

The initial studies have been carried out mainly at a field site of the SEATO Medical Research Laboratory at Phra Phutthabat, near Saraburi; at Ko Klet Kaeo, a small island in the Naval Reserve near Sattahip, which has been developed for these studies; and at Khao Yai National Park.

General direction of the initial studies has been given by Dr. Gershon Berkson of the Delta Regional Primate Research Center. Funds for the research have been made available through the Walter Reed Army Institute of Research, Washington, D.C. The research has also been supported in part by a grant (FR-00164) from the Division of Research Facilities and Resources, National Institutes of Health, U.S.A., to the Delta Regional Primate Research Center.

CONSERVATION OF GIBBONS IN NATURAL FORESTS

By Gershon Berkson*, Joe T. Marshall, Jr.+, and Bruce A. Ross+

Although other studies in this programme have shown that gibbons can be bred in a laboratory setting and maintained in a semi-natural island facility, it will probably remain true that future sources of gibbons for science will depend most heavily on those obtained from natural forests.

With the destruction of forests which is sometimes concomitant to development of field-crop agriculture, the natural habitat of gibbons is reduced and one must therefore expect a reduction in gibbon populations. Furthermore, in some areas of Thailand, gibbons are hunted vigorously. Since the age to sexual maturity in gibbons is 7 years and since a group ordinarily has a baby only once every two years, any concentrated hunting of gibbons can quickly diminish the population of an area.

Despite these factors, there still are many areas of Thailand where gibbons are plentiful, and it is primarily in these places where conservation programmes would be practical.

This study included a survey of the distribution of gibbons in Thailand; an estimate of spacing of groups in forests and an analysis of the potentiality of isolated forest patches as sites for a gibbon conservation programme.

DISTRIBUTION

During the past two years, investigators of the SEATO Medical Research Laboratory have heard or seen gibbons in the forests of the following provinces of Thailand: Mae Hong Son, Prachuap, Ranong, Trang, Yala, Trat, and Nakhon Ratchasima. It is likely that gibbons may also be found in Chiang Rai and Chanthaburi Provinces and that they live in the forested mountainous region which runs most of the length of the

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* Delta Regional Primate Research Center.

+ SEATO Medical Research Laboratory.

western border of Thailand. Information regarding the presence of gibbons in the central mountains and in the north-east region is contradictory.

There are two forms of gibbons in Thailand, Hylobates lar and H. pileatus. (A third, H. leucogenys, may also occur but this is not yet clear). Gibbons west of the central plain, in the north-west and also in the south are H. lar, H. pileatus lives in the south-eastern provinces. Both H. lar and H. pileatus may also be found in Nakhon Ratchasima and groups of both species are found living in Khao Yai National Park. Females of the two species have distinctly different calls, and it is therefore a relatively simple matter to detect their presence. Most groups near the asphalt highway in the Park are H. lar. However, H. pileatus has also been heard in four locations, quite widely distributed. There is at least one group of H. pileatus at the Sakaerat Experiment Station, 60 km south of Nakhon Ratchasima.

A survey of the 10,000 km^2 area between Chumphon and Takua Pa in the south indicated that there are gibbons throughout the mountains, even along the main highway. It is estimated that roughly 30,000 gibbons live there.

Hunting gibbons is practiced in most areas we have visited. One object of the hunting is to obtain young animals for the pet market, and it is the adult female with a baby which is most frequently shot. The baby is sold, and the female is often eaten since she is already dead. In many areas, gibbons are not shot primarily for food, but in some locations, especially in the far north and in outlying districts elsewhere, in places where there are few market facilities, they apparently are a food source. On the other hand, it should be noted that in certain regions (e.g., among the Yang people near Mae Sariang), it is considered bad luck to kill gibbons. Regional differences in hunting pressure are thus significant and probably depend mainly upon food supply and on attitudes about gibbons.

GROUP SPACING

During the report period, two small areas were surveyed to evaluate gibbon group concentration. One of these areas was in evergreen rain

forest 18-21 km north of Ranong in an area comprising approximately 3 km^2 (somewhat above two of which were forested). The other area was at Khao Yai National Park and measured 2 km^2. The method used was to locate gibbon groups from their morning calls which are audible for at least 500 m.

At Ranong, there were 4 groups in the area east of the main highway and one group each in two areas of forest west of the road. At Khao Yai Park, observations were made in September 1967 and January 1968 and five groups were heard on each occasion. In January, four groups were located in areas in which gibbon calls had been heard in September.

The above observations indicate that at both Ranong and Khao Yai Park the average concentration of gibbons was on the order of 100 areas per group. This estimate confirms those made in previous studies of gibbon home range size.

ISOLATED FOREST PATCHES

When land is cleared for agriculture in Thailand, patches of forest with water in them are often left uncut. Sometimes groups of gibbons may be found in these forests because there apparently, is enough food and water to maintain life and because feral gibbons do not cross the fields which surround them. At least one hunter in Thailand prefers to capture gibbons in these restricted forests because the animals can be more easily located and followed than they would be in extended forests. For the same general reasons, such areas might be appropriate as reserve areas.

During the report period, two isolated forests, one in Ranong and one at Khao Yai National Park, were studied. Both contained a year-round water supply. The one 20 k north of Ranong was 14 acres in size and contained at least three large gibbons and a baby. That at Khao Yai Park (11 acres) had a pair of gibbons with a baby.

Thus although average gibbon concentration is close to 100 acres, gibbons can live and reproduce in much smaller areas. This principle became the basis of a plan for reserve areas for gibbon husbandry. It was suggested that pairs of gibbons might be introduced into empty

forest patches in which there is a year-round supply of water. These patches would be in areas protected from hunting in regions where other gibbons are found. They would be checked on a routine basis to ascertain that the animals are doing well, and when infants are produced, they could be harvested.

To determine whether such a plan might be feasible, a pair of adult gibbons, carrying collar radio transmitters were placed in a 300 m x 40 m strip of forest at Khao Yai National Park. One animal was a feral adolescent female and the other a tame adult male. Both animals survived in the patch for one month following introduction, but a month later the tame male was found dead and the feral female had moved to a patch of forest 100 m away. Another pair will soon be introduced into a larger separate forest patch in the same park.