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POLICY STATEMENT

The purpose of the *Newsletter* is to provide a central source of information about nonhuman primates and related matters, which will be of use both to the community of scientists who use these animals in their research and to those persons whose work supports such research. Accordingly, the *Newsletter* (1) provides information on care, breeding, and procurement of nonhuman primates for laboratory research, (2) disseminates general information and news about the world of primate research (such as announcements of meetings, research projects, sources of information, nomenclature changes), (3) helps meet the special research needs of individual investigators by publishing requests for research material or for information related to specific research problems, and (4) serves the cause of conservation of nonhuman primates by publishing information on that topic. As a rule, the only research articles or summaries that will be accepted for the *Newsletter* are those that have some practical implications or that provide general information likely to be of interest to investigators in a variety of areas of primate research. However, special consideration will be given to articles containing data on primates not conveniently publishable elsewhere. General descriptions of current research projects on primates will also be welcome.

The *Newsletter* appears quarterly and is intended primarily for persons doing research with nonhuman primates. Back issues may be purchased for $2.00 each. (Please make checks payable to Brown University.)

The publication lag is typically no longer than the 3 months between issues and can be as short as a few weeks. The deadline for inclusion of a note or article in any given issue of the *Newsletter* has in practice been somewhat flexible, but is technically the fifteenth of December, March, June, or September, depending on which issue is scheduled to appear next. Reprints will not be supplied under any circumstances.

PREPARATION OF ARTICLES FOR THE *NEWSLETTER*.--Articles and notes should be submitted in duplicate and all copy should be double spaced. Articles in the References section should be referred to in the text by author(s) and date of publication, as for example: Smith (1960) or (Smith & Jones, 1962). Names of journals should be spelled out completely in the References section. Technical names of monkeys should be indicated at least once in each note and article. In general, to avoid inconsistencies within the *NEWSLETTER* (see Editor's Notes, July, 1966 issue), the scientific names used will be those of Napier and Napier [*A Handbook of Living Primates*. New York: Academic Press, 1967]. For an introduction to and review of primate nomenclature see the chapter by Maryeva Terry in A. M. Schrier (Ed.), *Behavioral Primatology: Advances in Research and Theory* (Vol. 1). Hillsdale, NJ: Lawrence Erlbaum Associates, 1977.

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EFFECT OF ANTICOAGULANT CONCENTRATION ON COMMON MARMOSET (*CALLITHRIX JACCHUS*) BLOOD

D. W. McNees, B. J. Caronia, R. W. Lewis, and F. J. Stein

Texas A&M University

Since only minimal quantities of blood can be obtained from marmosets due to the inherently small blood volume of the species, it was felt that for routine clinical and hematological determinations the techniques and findings presented herein would prove useful. Use of the proper concentrations of anticoagulants in preparation of the blood samples should eliminate excessive sample loss and should save time.

Obtaining a clot-free blood sample was difficult using the recommended procedures for laboratory animals (Benjamin, 1961; Curtius & Roth, 1974; Mitruka & Rawnsley, 1977; Sciverd, 1972; Wintrobe, 1967; Anderson, Lewis, Passovoy, & Trobaugh, 1967). This report describes a method for collecting and maintaining clot-free blood samples from *Callithrix jacchus*.

Method

Blood from the femoral vein of normal adult marmosets of both sexes was collected in a 1.0 ml sterile tuberculin disposable syringe with a long barreled detachable 5/8-in. 25-gauge needle (Yale needle, Becton, Dickinson, and Co.). The marmosets were anesthetized with a 0.05 ml injection of 100 mg/ml ketamine HCl solution (Parke Davis).

After the recommended (Curtius & Roth, 1974) 1% of the dipotassium salt of ethylenediaminetetraacetic acid (EDTA·K_2) solution failed to prevent coagulation, three concentrations (1%, 5%, 10%) of EDTA·K_2 were used to determine the percentage required to prevent clotting. A solution containing 10 mg of heparin has been recommended to prevent coagulation (Mitruka & Rawnsley, 1977), but we found it to be only about 40% effective. Therefore, 10 mg/ml and 20 mg/ml solutions of heparin were also used.

Every effort was made to use standardized techniques (Benjamin, 1961) in determining the anticoagulant effectiveness of the substances used. The syringe and attached needle were rinsed three times with the anticoagulant solution being tested. The 0.5 ml vial used for collecting blood samples was also rinsed with the particular anticoagulant and allowed to drain. Care was taken to leave no residue after rinsing. Immediately after the sample was drawn, the needle was removed and

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blood was slowly expelled from the syringe into the vial and slowly agitated. After one hour, the samples were examined for evidence of clotting.

Results

Since the potassium salt of EDTA is more soluble than the sodium salt, it was chosen for this study (Sciverd, 1972). The results of using various concentrations of EDTA·K_2 are presented in Table 1.

Table 1. Effect of EDTA concentration on coagulation of *C. jacchus* blood

		Concentration		
Animal No.	Sex	1%	5%	10%
74A007	F	+	-	-
71W002	M	+	+	-
76B006	M	+	+	-
76B014	M	+	+	-
76A005	F	+	-	-
76B013	F	+	+	-
76B010	M	+	+	-
76B011	F	+	+	-
76B012	M	+	+	-
75B028	M	+	+	-

Note. + stands for coagulated and - stands for not coagulated.

EDTA·K_2 has been recommended as the anticoagulant for hematological and blood typing procedures, whereas heparin has been recommended for enzymatic procedures (Benjamin, 1961). The syringes and vials that were treated with 1% EDTA:K_2 evidenced no anticoagulation. Treatment with the 5% EDTA·K_2 resulted in no coagulation in two of the 10 samples while treatment with 10% EDTA·K_2 resulted in no coagulation in any of the samples. Therefore, a 10% EDTA·K_2 solution was required to achieve the desired anticoagulant effect. Table 2 shows that clotting occurred in

Table 2. Comparison of Anticoagulant Concentrations on *C. jacchus* blood

No. of Animals	Concentration of Anticoagulant	No. Samples Coagulated	Per cent Coagulated
60	10% EDTA·K_2	1	1.6
30	1% EDTA·K_2	30	100.0
38	20 mg/ml heparin	3	7.9
18	10 mg/ml heparin	8	44.0

only one of the 60 blood samples collected and stored in the vials rinsed with the 10% EDTA·K_2 solution.

Solutions of 10 mg/ml and 20 mg/ml sodium heparin were compared (Table 2). Forty-four percent of the 10 mg/ml heparin solutions coagulated and only 8% of 20 mg/ml heparin solutions coagulated.

Conclusions

These results indicate that the recommended concentrations of anticoagulants (EDTA·K_2 and heparin) must be increased for effective routine blood analysis of *C. jacchus*. Ten percent EDTA·K_2 and 20 mg/ml sodium heparin solutions were found to be adequate for hematologic and enzymatic studies.

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SUSCEPTIBILITY OF VERVET MONKEYS TO ANESTHETIC

H. S. Garcha, D. Malone, and G. Ettlinger

Institute of Psychiatry, London

In the period 1968-1978 we have anesthetized a large number of *Macaca mulatta* and a few *M. fascicularis* monkeys for neurosurgical procedures, averaging about 40 per annum. Our standard procedure from about 1972 has been to immobilize the monkey with intramuscular ketamine according to the dosage recommended by Drake (1972); then to give intravenous pentobarbital sodium (Nembutal, Abbott, N. Chicago, IL) until the respiration slowed; and then to supplement as required with additional pentobarbital through an intravenous catheter inserted for the duration of the procedure. (If the catheter becomes occluded supplementary pentobarbital is injected intraperitonealy.)

When in January, 1979 we came to operate on a series of vervet monkeys (*Cercopithecus aethiops*), we found that we needed less anesthetic, *pro rata*. Table 1 shows the amounts required for surgery lasting, in each

Table 1. Anesthetic doses (in mg) administered to *C. aethiops* and *M. mulatta*

Animal (*C. aethiops*)	Weight (kg)	Total Ketamine	Total Pentobarbital
4	3.4	40	120
1	2.5	50	72
2	2.4	40	48
5	2.4	30	72
7	2.4	30	36
6	2.0	25	120
3	1.9	40	36
Averages			
C. aethiops	2.4	36.4	72.0
M. mulatta	2.4	30.0	96.0

Note.--Animals are numbered by sequence of surgery, but are ordered by decreasing weight.

case, 4 to 5 hours. (The surgery involved cortical ablations with or without commissure section.) These amounts in combination are less than we would expect to use in rhesus monkeys (see Table 1), but particularly in respect to the pentobarbital which was given after the

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ketamine. The ketamine dosages were large because the monkeys had to be transported over a long distance to surgery. Also, in the case of the first three animals, we did not yet know the effects of anesthetics on vervet monkeys. The vervet monkeys also seem to consume less food, *pro rata*, so it is possible that their metabolism is generally reduced.

References

Drake, K. J. Initial experiences with ketamine anesthesia in nonhuman primates. *Laboratory Primate Newsletter*, 1972, *11* [2], 18-27.

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AMBOSELI BABOON MONITORING GUIDEBOOK

A guidebook of instructions for gathering certain long-term data on the baboons of Amboseli National Park and their habitat has been prepared. Because the guidebook may be useful to those planning similar data monitoring and may lead to greater cross-species comparability in data, the guidebook is being made available to others at cost.

Topics include demographic data, sexual skin records, group movements, sleeping grove utilization, subgroups, sources of water, interactions with predators and prey, interactions with other baboon groups, human disturbance, agonistic interactions, wounds, diseases and other pathologies, time budgets of major activities and of primary foods, physical development, meteorological data, and phenological samples.

Collecting the monitoring data in Amboseli should take about 10% of a person's time. The data contribute to a common pool of information that is useful to each investigator, as well as providing information on certain long-term trends and rare phenomena that cannot be studied adequately in the course of a single study.

To obtain a copy of the guidebook by surface mail, send U.S. $3 (U.S. postal addresses) or $4 (all other addresses) to: Guidebook, c/o S. Altmann, 5712 S. Ingleside Ave., Chicago, IL 60637.

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REPORT OF AN UNUSUAL INTERSPECIES ADOPTION BY A RHESUS MONKEY

Hector S. Martinez and Matt J. Kessler

Caribbean Primate Research Center

An adult female rhesus monkey (*Macaca mulatta*), a member of a harem of 20 females and 1 male, confined to an outdoor corral measuring 7.6 m sq was noted one morning carrying a dead newborn infant. It was not determined if the infant had been stillborn or had died shortly after birth during the night. The corral was entered by animal caretakers, and the dead infant was removed from the clutches of its mother.

We were startled to note later in the day that the monkey was cuddling another live animal. On closer observation, it became obvious that the monkey was caressing a live, feral, juvenile Norway rat (*Rattus norvegicus*) against its chest. The monkey appeared quite content with the surrogate baby, and the rat made no apparent attempts to escape. (Norway rats were numerous in the area at this time due to heavy rains, and often were seen traversing the corrals.) The monkey continued to carry the young rat until the following day when the rat was found dead. It was necessary for our caretakers to enter the corral and remove the dead rat from the hold of the monkey.

This description provides yet another documentation of unusual or aberrant behavior observed in rhesus monkeys at this Center. It would be most interesting if additional cases of this type were made available through this publication.

Notes

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DATES OF VIIIth CONGRESS OF THE INTERNATIONAL PRIMATOLOGICAL SOCIETY

The dates of the VIIIth Congress of the International Primatological Society, to be held in Florence, Italy, are July 7-12, 1980. For further information write to: Dr. A. B. Chiarelli (after November 1, 1979) at Institute of Anthropology; Via del Proconsolo, 12; 50122 Firenze, Italy. (Address until November 1: Institute of Anthropology; Via Accademia Albertina 17; 10123 Turino, Italy.)

BRAZILIAN PRIMATOLOGICAL SOCIETY FORMED

The Sociedade Brasileira de Primatologia has been formally established, in a session held at the Instituto Butantã, São Paulo, on March 31, 1979. Its main objectives are: to stimulate research in all aspects of Primatology; to provide the scientific basis for primate conservation programs, in Brazil; to serve as a consulting agency for government projects and programs that deal with land development or fauna management that affect directly or indirectly any primate species. For further details, please contact: Dr. Fernando Dias de Avila-Pires, UNICAMP - Depto. Zoologia, CX. Postal 1170, 13100 Campinas, S.P., Brazil.

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ASSOCIATION OF PRIMATE VETERINARY CLINICIANS FORMED

A new organization, the Association of Primate Veterinary clinicians, was chartered at the Seventh Annual Primate Veterinarians Workshop held this May at Sterling Forest, New York. First held in 1973 as a roundtable discussion, the group has met each year in workshop fashion to discuss mutual problems in primate medicine.

The objectives of this organization, to veterinarians, are threefold: (1) To promote the dissemination of information relating to the care and welfare of nonhuman primates; (2) To provide a mechanism by which primate veterinarians may speak collectively on matters regarding nonhuman primates; (3) To promote fellowship among veterinarians.

During the meeting, by-laws were adopted, and a Board of Directors was elected and installed. Board members are: David P. Martin, V.M.D., President (Litton Bionetics, Inc.), Robert Wolf, D.V.M., Vice President (Delta Regional Primate Research Center), Roy V. Henrickson, D.V.M., Secretary (California Primate Research Center), Gary T. Moore, D.V.M., Treasurer (Southwest Foundation for Research and Education), Arthur S. Hall, D.V.M. (Litton Bionetics, Inc.), Amos E. Palmer, D.V.M. (National Institute of Neurological and Communicative Disorders and Stroke), Dale Boyd, D.V.M. (Hazleton Laboratories America, Inc.), Dan Dalgard, D.V.M. (Hazleton Laboratories America, Inc.).

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NEWS ABOUT INTERAGENCY PRIMATE STEERING COMMITTEE

Dr. Benjamin D. Blood retired from full-time government service at the end of June, 1979, Dr. Robert A. Whitney, Jr., Chief, Veterinary Resources Branch, National Institutes of Health, is serving as the Acting Executive Director of the Committee. Dr. Blood plans to continue working with the Committee on a number of programs and special projects.

THREE-YEAR SUMMARY OF THE CENSUS, MORBIDITY, AND MORTALITY REPORTS

V. J. Nash, G. N. Cameron, and A. S. Chamove

Stirling University

The quarterly surveys conducted by the *Laboratory Primate Newsletter* between 1975 and 1977 inclusive provide the data for the tabular summary presented here.[1] These surveys have, for 12 three-month periods, given census figures and births, and indicated the number of illnesses and deaths in the quarter and the cause.

Tables 1 and 2 in the present report summarize the data for 33 species and 12 disease categories over the three years of these surveys. The results are presented for the four quarters each year so as to indicate possible seasonal differences.

The census and birth figures are simply the overall mean number of animals or births in the reporting laboratories in each quarter. The quarterly morbidity and mortality figures are percentages of the overall number of animals reported for each category. In determining the percentages, the census figures were corrected for births occurring during the quarter by increasing the census figure by half the birth figure. The total morbidity and mortality figures are the above summed across diseases. It should be noted that the diagnosis of an animal's illness may involve entries in several disease categories. Overall morbidity and mortality figures are weighted means of the total quarterly figures and provide an overall index of susceptibility to disease for the various species.

Where census figures were not given in the raw data for a particular species, none of the data for that species for that quarter was used. Blank spaces indicate that there were no census figures reported for that quarter during any of the three years.

It should be kept in mind that the census figures have never included colonies of a particular species when the number of animals at the reporting facility was less than 25. This is so even though mortality and morbidity are reported for such species. Hence, in the present report, when the census figures are small, morbidity and mortality percentages will often be inflated, sometimes considerably, as for example, in the case of overall mortality and other summarized data for *Saguinus oedipus*.

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[1]See the following issues of this *Newsletter:* January, April, and October, 1976; April and October, 1977; April, July, and October, 1978.

Table 1. Three-Year Summaries of Mortality

SPECIES	OVERALL					GENERALIZED				INTEGUMENTARY				MUSCULOSKELETAL			
	Q1-4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Pan troglodytes	1.1	2.0	0.7	0.7	1.2	1.0	0.2	0.1	0.3	0	0	0	0	0	0	0	0
Pongo pygmaeus	2.3	2.0	2.9	1.4	3.0	0	2.9	0	1.0	0	0	0	0	0	0	0	0
Papio papio	2.0	2.9	0.5	2.0	2.9	2.9	0.5	0	0.6	0	0	0	0	0	0	0	0
P. anubis	2.4	0.8	0	2.2	3.0	0	0	0	0.1	0	0	0	0	0	0	0	0
P. cynocephalus	3.4	7.9	1.0	3.1	0.8	0	0	1.1	0	0	0	0	0	0	0	0	0
P. spp.	2.1	2.0	2.5	2.0	2.0	0	0.2	0.5	0.4	0	0	0		0	0	0	0
Macaca fuscata	0.4	0.4				0				0			0	0			
M. arctoides	3.4	3.1	2.8	2.6	5.0	0.5	0.1	0.4	0.7	0	0	0	0	0	0.1	0	0
M. cyclopis	5.9	9.1	1.6	4.3	2.3	1.1	0.4	0.4	2.3	0	0	0	0	0	0	0	0
M. mulatta	2.2	2.1	1.7	2.5	2.4	0.3	0.1	0.2	0.4	0	0	0	0	0	0	0	0
M. fascicularis	3.0	3.8	3.4	1.9	2.9	0	0.6	0.6	0.5	0.1	0	0	0.1	0	0	0	0
M. nemestrina	6.0	5.8	5.1	9.2	4.1	0.5	0.7	0.6	0.3	0	0.1	0	0	0	0	0	0
M. radiata	1.9	3.2	1.5	1.8	1.1	0.4	0.1	0	0.2	0	0	0	0	0	0	0	0
M. hybrids	3.9	4.8	0	3.2	5.3	1.6	0	0	0	0	0	0	0	0	0	0	0
Cynopithecus niger	3.4	1.9	0	1.8	7.1	0	0	0	2.7	0	0	0	0	0	0	0	0
Cercocebus atys	0.7	0	1.1	1.1	0.7	0	0	0	0	0	0	0	0	0	0	0	0
Erythrocebus patas	5.1	2.2	11.5	1.6	4.6	1.1	0.4	0.4	1.5	0	0	0	0	0	0	0	0
Cercopithecus aethiops	10.0	3.8	12.6	6.0	15.4	0	1.5	0.6	4.0	0	0	0	0	0	1.0	0	0
Saimiri sciureus	5.3	3.8	6.2	5.6	5.6	0.8	0.9	0.7	1.8	0	0	0	0	0	0	0	0
Cebus apella	3.3	0	3.4	5.1	4.7	0	0	0	1.2	0	0	0	0	0	0	0	0
C. spp.	1.7	4.2	2.3	0.9	0.7	0	0	0	0	0	0	0	0	0	0	0	0
Aotus trivirgatus	8.5	11.1	9.5	7.0	8.3	3.7	3.3	2.4	4.3	0	0	0	0	0	0	0	0
Callicebus moloch	9.1			9.1				0								0	
Saguinus oedipus	25.4	6.6	25.3	21.3	33.7	2.9	2.9	2.8	9.0	0	0	0.9	0	0	0	0	0.2
S. nigricollis	8.9	3.1	5.9	18.3	12.1	1.9	0	1.8	0	0	0	0	0	0	0	0	0
S. mystax	5.8	1.8	0	0	15.2	0.9	0	0	4.1	0	0	0	0	0	0	0	0
S. spp.	9.1		7.8	12.4	17.1	0	0.6	0	2.1	0	0	0	1.0	0	0	0	0
Lemur macaco	8.0	8.0				0				0				4.0			
L. fulvus	0.8	0.6			1.1	0			0	0			0	0			0
L. catta	1.3	1.4			1.2	0			0	0			0	0			0
Galago argentatus	1.1	1.6			0	1.6			0	0			0	0			0
G. crassicaudatus	0.7	0.4			3.7	0.1			0	0			0	0			0
G. hybrid	3.6			3.6				0	0			0	0			0	0

Note. Footnotes on p. 16.

Table 1 (continued)

SPECIES	RESPIRATORY				CARDIOVASCULAR				DIGESTIVE				UROGENITAL			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Pan troglodytes	0.5	0.2	0	0	0.1	0	0.1	0.1	0.3	0	0.1	0.3	0	0	0.1	0
Pongo pygmaeus	1.0	0	1.4	0	0	0	0	0	1.0	0	0	2.0	0	0	0	0
Papio papio	0	0	1.0	0	0	0	0	0	0	0	0.5	1.7	0	0	0	0
P. anubis	0	0	0.2	0.9	0	0	0.2	0.4	0	0	0.1	0.6	0	0	0	0
P. cynocephalus	1.0	1.0	0.4	0.4	0.5	0	0	0	1.0	0	0.4	0.4	0	0	0	0
P. spp.	0.4	0.4	0.2	0.5	0.1	0	0	0	0.5	0.5	0.3	0.4	0.1	0.2	0.1	0.1
Macaca fuscata	0.2				0.2				0				0			
M. arctoides	0.3	0	0.3	0.3	0	0	0	0	0.8	1.5	1.2	2.1	0	0	0	0.4
M. cyclopis	1.7	0	0.7	0	0	0	0	0	2.3	0.4	0.7	0	0	0	0.7	0
M. mulatta	0.5[d]	0.4[e]	0.8[f]	0.9[g]	0	0.1	0.1	0.1	0.6	0.4	0.6	0.5[h]	0.1	0	0	0.1
M. fascicularis	0.5	0.2	0.2	0.3	0.1	0.2	0	0.1	0.2	0.4	0.2	0.6	0.2	0	0	0.1
M. nemestrina	0.7	0.6[l]	1.1	1.2	0	0	0	0	1.9	1.5	4.7	1.6	0.8[m]	0.8[n]	0.6[o]	0.2
M. radiata	0.1	0.1	0.3	0	0.1	0	0.1	0	1.1	0.4	0.3	0	0	0	0	0
M. hybrids	0	0	0	0	0	0	0	0	0	0	0	3.5	0	0	0	0
Cynopithecus niger	0	0	0	0	0	0	0	0	1.3	0	0	3.5	0	0	0	0
Cercocebus atys	0	0	1.1	0	0	0	0	0	0	1.1	0	0.7	0	0	0	0
Erythrocebus patas	0	2.5	0.8	1.5	0	0	0	0	1.1	0.4	0	0.4	0	2.5	0	0
Cercopithecus aethiops	1.9	5.6[p]	0.6	2.7	0	0	0	0	1.9	1.5	1.2	0.7	0	0.5	0	0
Saimiri sciureus	0.2	0.3	0.4	0.5	0	0.1	0.1	0.1	0.3	1.1	0.7[q]	0.6	0.2	0.5	0.2	0.2
Cebus apella	0	0	1.3	3.5	0	0	0	0	0	0	0	0	0	2.4	0	0
C. spp.	0	1.3	0	0.7	0	0	0	0	0	1.0	0	0	0	0	0	0
Aotus trivirgatus	0.6	0.9	1.7	0.6	0	0.4	0.5	0.2	0	0.5	0.3	0.6	1.2	0.7	0.3	0.6
Callicebus moloch			0				0				6.1				0	
Saguinus oedipus	1.5	0.7	0.9	4.1	0	0	0	0.2	1.5	11.6	9.7	10.7	0	0	0.5	0
S. nigricollis	0	0	0.9	1.1	0	0	0	0	1.2	0.7	6.4	2.2	0	2.2	0	0
S. mystax	0.9	0	0	3.0	0	0	0	0	0	0	0	5.2	0	0	0	0
S. spp.	0	1.2	4.1	7.9	0	0.3	0	0	0	2.7	5.3	3.1	0	0	0	1.0
Lemur macaco	0				0				0				0			
L. fulvus	0			0	0			0	0.6			0	0			0
L. catta	0			0	0			0	1.4			0	0			0
Galago argentatus	0			0	0			0	0			0	0			0
G. crassicaudatus	0			0	0			0	0			0	0			1.9
G. hybrid			0	0			3.6	0			0	0			0	0

Note. Footnotes on p. 16.

Table 1 (continued)

SPECIES	NERVOUS				ENDOCRINE				NEOPLASIA				TRAUMA				UNSPECIFIED			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Pan troglodytes	0	0.1	0	0.2	0	0	0	0	0	0.1	0	0	0.1	0.1	0.2	0	0	0	0.1	0.3
Pongo pygmaeus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Papio papio	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	0.6
P. anubis	0	0	0	0	0	0	0	0	0	0	0	0	0.8	0	0	0.2	0	0	1.7[a]	0.8[b]
P. cynocephalus	0	0	0	0	0	0	0	0	0	0	0.4	0	0	0	0.4	0	5.4	0	0.4	0
P. spp.	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.3	0.2	0.1	0.7	0.9	0.7[c]	0.5
Macaca fuscata	0				0				0				0				0			
M. arctoides	0	0	0	0	0	0	0	0.1	0	0	0.3	0	0.7	0.6	0.1	0.7	0.8	0.5	0.3	0.3
M. cyclopis	0	0	0	0	0	0	0	0	0	0	0	0	0.6	0.4	0.7	0	3.4	0.4	1.1	0
M. mulatta	0.1	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2	0.3	0.2	0.4[i]	0.5	0.5	0.2[j]
M. fascicularis	0	0	0	0	0.1	0.1	0	0	0	0	0	0	0.3	0.4	0.4	0.2	2.3[k]	1.3	0.5	1.0
M. nemestrina	0.1	0.1	0.2	0	0	0	0	0	0	0	0	0	0.7	1.1	1.9	0.7	1.1	0.2	0.1	0.1
M. radiata	0	0	0	0.1	0	0	0.1	0.1	0	0	0	0.1	0.1	0.1	0.7	0.3	1.4	0.8	0.3	0.3
M. hybrids	1.6	0	0	0	0	0	0	0	0	0	0	0	1.6	0	0	1.8	0	0	3.2	0
Cynopithecus niger	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.8	0.9	0.6	0	0	0
Cercocebus atys	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Erythrocebus patas	0	0	0	0.4	0	0	0	0	0	0	0	0	0	0.4	0	0.4	0	5.3	0.4	0.4
Cercopithecus aethiops	0	0.5	0	0	0	0	0	0	0	0	0	0	0	0	3.0	4.0	0	2.0	0.6	4.0
Saimiri sciureus	0	0	0	0	0	0	0	0.1	0	0	0	0	0.2	0.7	0.3	0.7	2.1	2.6	3.2	1.6
Cebus apella	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.3	0	0	1.2	2.5	0
C. spp.	0	0	0	0	0	0	0	0	0	0	0	0	0.6	0	0	0.4	3.6	0	0.9	0
Aotus trivirgatus	0	0.5	0.2	0	0	0	0	0	0	0	0	0	0.6	0.7	0.2	0.2	5.0	2.5	1.4	1.8
Callicebus moloch			0				0				0				0				3.0	
Saguinus oedipus	0	0	1.9	0.5	0	0	0	0.5	0	0	0	0	0.7	0.7	0	0.5	0	9.4	4.6	8.0
S. nigricollis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.4	0	3.0	9.2	4.4
S. mystax	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.7	0	0	0	2.2
S. spp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0.6	0.6	1.0	0	2.4	2.4	1.0
Lemur macaco	4.0								0				0				0			
L. fulvus	0			0	0			0	0			0	0			1.1	0			0
L. catta	0			0	0			0	0			0	0			1.2	0			0
Galago argentatus	0			0	0			0	0			0	0			0	0			0
G. crassicaudatus	0.1			0	0			0	0			0	0.2			0.9	0			0.9
G. hybrid			0	0			0	0			0	0			0	0			0	0

Note. Footnotes on p. 16.

Table 2. Three-Year Summary of Census, Births, and Morbidity

SPECIES	CENSUS				BIRTH RATE				OVERALL MORBIDITY				
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1-4	Q1	Q2	Q3	Q4
Pan troglodytes	242	269	336	381	5.7	4.7	5.0	6.3	26.8	45.1	40.2	11.3	19.3
Pongo pygmaeus	34	23	24	34	0.3	0.7	0.3	0.3	53.8	61.6	37.1	69.5	46.1
Papio papio	68	69	67	59	0.7	0.3	0.7	2.0	24.8	57.9	8.3	8.0	24.6
P. anubus	40	28	328	360	1.3	0.7	10.0	19.7	11.4	2.4	3.6	8.1	16.1
P. cynocephalus	68	35	86	79	0	0	1.3	0	14.6	17.1	26.8	9.5	12.7
P. spp.	760	872	915	964	22.0	19.7	27.0	19.7	10.6	16.9	5.3	9.2	11.6
Macaca fuscata	141	0	0	0	4.3	0	0.3	0	0.5	0.5			0.5
M. arctoides	195	256	228	246	7.0	7.7	6.7	4.3	23.6	24.7	19.5	24.1	26.6
M. cyclopis	58	88	89	87	1.3	4.3	1.0	0	1.9	0.6	1.9	0.4	3.5
M. mulatta	5632	5095	4945	5683	145.3	236.0	112.0	73.3	20.3	20.3	16.7	24.3	20.1
M. fascicularis	411	464	422	410	30.0	14.3	10.0	7.0	7.3	6.7	9.7	3.7	9.1
M. nemestrina	692	690	693	780	41.3	47.3	32.0	23.3	13.3	16.8	13.6	10.6	12.3
M. radiata	261	272	285	287	9.3	17.0	4.7	1.3	28.9	19.6	24.3	33.6	37.2
M. hybrids	20	10	10	19	1.3	19.7	0	0	2.1	6.4	0	0	0
Cynopithecus niger	52	10	18	37	1.0	0.3	0.3	2.0	10.3	12.0	0	22.9	4.5
Cercocebus ayts	28	30	31	47	0	0.3	2.0	0.7	1.7	2.4	1.1	1.1	2.1
Erythrocebus patas	61	81	85	87	0.7	0.3	0.3	0	10.0	12.9	8.5	13.3	6.2
Cercopithecus aethiops	34	66	56	49	0.3	0	0.3	0.7	33.9	53.2	51.5	23.3	8.8
Saimiri sciureus	711	778	819	889	1.7	25.7	38.7	6.7	4.9	2.6	6.5	6.8	3.8
Cebus apella	28	27	26	29	0	1.7	1.7	0	1.8	1.2	2.4	1.3	2.3
C. spp.	56	104	117	90	0	0	0.7	0	0.4	0	0.6	0.6	0
Aotus trivirgatus	53	181	191	206	1.0	5.3	2.7	2.7	2.2	1.2	2.6	1.2	3.0
Callicebus moloch	0	0	11	0	0.7	0.7	0	0	30.4			30.4	0
Saguinus oedipus	45	45	72	135	1.7	2.0	0.3	1.3	9.5	0.7	15.1	2.4	14.5
S. nigricollis	53	43	36	30	2.0	3.0	0.7	0.7	26.7	16.5	31.2	22.8	43.3
S. mystax	37	70	39	88	0	1.3	4.3	0	0	0	0	0	0
S. spp.	59	112	56	63	0.3	2.3	0.7	0.7	0.3	0	0.9	0	0
Lemur macaco	8	0	0	0	0.3	0	0	0	0	0			0
L. fulvus	56	0	0	30	2.3	0	0	1	2.7	4.1			0
L. catta	48	0	0	28	0	0	0	0	8.4	10.4			4.8
Galago argentatus	20	0	0	10	1.3	0	0	0	0	0			0
G. crassicaudatus	407	0	0	35	1.0	0	0.7	1.3	0.3	0.3			0
G. hybrid	0	0	9	9	0	0	0.3	0.3	3.6			3.6	3.6

Note. Footnotes on p. 16.

Table 2 (continued)

SPECIES	GENERALIZED				INTEGUMENTARY				MUSCULOSKELETAL				RESPIRATORY			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Pan troglodytes	1.1	1.0	0.4	1.4	0.8	0.6	0.1	0.3	0.7	0	0.1	0.3	6.8	1.2	0.7	1.3
Pongo pygmaeus	2.0	0	1.4	1.0	1.0	0	0	1.0	1.0	0	2.7	0	7.8	0	1.4	5.9
Papio papio	35.9	0	0	0.6	4.9	1.0	0	5.0	1.5	0	0	0.6	1.0	0.5	0	0.6
P. anubis	0.8	0	1.1	1.5	0	0	2.6	6.0	0.8	0	0.2	0.1	0	1.2	0.1	0
P. cynocephalus	12.7	5.7	2.3	0.4	1.0	3.8	1.1	3.3	0	1.0	0	2.1	0	1.0	0.4	0.4
P. spp.	2.0	0.9	1.1	1.5	0.4	0.1	0.1	0	0	0	0	0	0	0	0	0
Macaca fuscata	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. arctoides	0.3	0.4	0.4	0.4	1.5	3.5	2.2	2.1	0.3	1.9	0.6	0.5	1.5	1.0	1.0	0.7
M. cyclopis	0	0.4	0.4	1.5	0	0.7	0	0	0	0.4	0	0	0	0	0	0
M. mulatta	0.2	0.4	0.3	0.3	1.6	2.6	3.0	2.6	1.1	1.5	1.0	1.0	2.6[a]	2.6[b]	3.4[c]	2.0[d]
M. fascicularis	0.1	0.5	0.4	0.2	0.2	0	0.2	0.6	0.1	0	0	0.2	2.6	1.6	0.2	1.1
M. nemestrina	0.6	0.5	0.4	0.8	0.4	0.6	0.5	0.2	0.8	0	0	0	0.4	0.7	0.7	0.9
M. radiata	0	0.1	0.1	0.3	1.9	2.4	4.5	3.0	0.8	2.7	3.9	2.0	1.8	0.6	2.6	1.0
M. hybrids	0	0	0	0	1.6	0	0	0	1.6	0	0	0	0	0	0	0
Cynopithecus niger	0	0	11.0	0.9	0	0	1.8	0	0.6	0	0	0.9	1.9	0	0	0
Cercocebus atys	0	0	0	0	0	0	0	0	0	0	0	0.7	0	0	0	0
Erythrocebus patas	0	0.4	0	0.8	0	0.4	0	0	0.5	0	0	0	0	0.8	0	0.8[k]
Cercopithecus aethiops	30.9	0	2.4	0.7	3.9	0	0	0	0	0	15.5	0	0	16.7[n]	0	0
Saimiri sciureus	0.6	0.6	0.3	0.9	0.1	0.3	0.1	0.3	0.2	0.2	0.3	0.2	0.1	0.4	0	0.1
Cebus apella	1.2	2.4	1.3	0	0	0	0	0	0	0	0	0	0	0	0	0
C. spp.	0	0.3	0	0	0	0	0.3	0	0	0	0	0	0	0	0	0
Aotus trivirgatus	0	0.4	1.0	0	0	0	0	0.2	0	0	0	0	0	0.2	0	0.5
Callicebus moloch			0				0				0				9.1	
Saguinus oedipus	0.7	0.7	0.5	6.6	0	0	0	0.2	0	0	0	0.2	0	5.1	0	2.7
S. nigricollis	0	0	0	0	1.2	3.0	2.8	6.7	1.2	2.2	1.8	2.2	0 0	1.5	0.9	0
S. mystax	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S. spp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lemur macaco	0				0			0	0				0			
L. fulvus	0			0	0				0.6			0	0			0
L. catta	0			3.6	5.5			0	1.4			0	0.7			0
Galago argentatus	0			0	0			0	0			0	0			0
G. crassicaudatus	0			0	0			0	0			0	0			0
G. hybrid			0	0			3.6	0			0	0			0	0

Note. Footnotes on p. 16.

Table 2 (continued)

SPECIES	CARDIOVASCULAR				DIGESTIVE				UROGENITAL				NERVOUS			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Pan troglodytes	0.4	0	0	0	33.0	30.4	8.6	13.1	0.7	0.1	0.3	0.5	0.4	0.1	0.2	0.3
Pongo pygmaeus	2.0	0	1.4	3.9	42.9	35.7	1.2	28.4	0	0	0	2.9	0	0	0	0
Papio papio	0	0	0	0	11.7	5.3	7.0	14.4	0.5	0	0.5	0.6	0	0	0	0.6
P. anubis	0	0	0	0	0	0	1.5	4.3	0	0	0.4	0.3	0	0	0	0
P. cynocephalus	0	0	0	0.8	0	11.4	3.4	1.6	0	1.9	1.1	1.2	0.5	0	0.4	0.4
P. spp.	0	0	0	0	1.9	1.2	2.3	1.8	0	0.2	0	0	0	0	0	0
Macaca fuscata	5.7	0.1	0.3	1.6	0.5				0				0			
M. arctoides	0	0	0	0	8.9	9.0	15.3	16.4	1.2	1.0	0.6	0.7	0.2	0.1	0	0.7
M. cyclopis	0.2	0.2	0.4	0.4	0	0	0	0	0.6	0.4	0	0	0	0	0	0
M. mulatta	0	0	0	0	11.3[e]	5.6[f]	11.6[g]	10.2[h]	1.0[i]	0.7	1.0	0.8	0.1	0.5	0.1	0.2
M. fascicularis	0	0	0	0	2.0	6.2[j]	1.6	2.5	0.2	0.3	0.1	0.2	0.1	0	0	0.3
M. nemestrina	0.5	0	0.7	0.1	7.8	6.5	3.9	6.4	1.2	1.6	1.0	0.8	0	0	0	0.2
M. radiata	0	0	0	0	8.6	12.0	14.0	25.2	2.9	3.9	3.1	2.3	1.0	0.5	1.3	0.6
M. hybrids	0	0	0	0	0	0	0	0	0	0	0	0	1.6	0	0	0
Cynopithecus niger	0	0	0	0	6.3	0	5.5	1.8	1.3	0	1.8	0.9	0	0	0	0
Cercocebus atys	0	0	0	0	1.2	0	0	0	0	0	0	0	0	0	0	0
Erythrocebus patas	0	0.5	0	0	11.4[l]	4.1	12.5	1.5[m]	0.5	0	0	0	0	0	0	0
Cercopithecus aethiops	0	0	0.5	0.1	5.8	29.8[o]	1.2	0	0	0	0	0.7	0	0.5	0	0
Saimiri sciureus	0	0	0	0	0.6	3.5[p]	1.1	1.0	0	0.2	0.4	0.1	0	0.1	3.3	0.1
Cebus apella	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0
C. spp.	0	0.7	0	1.1	0	0	0.3	0	0	0	0	0	0	0	0	0
Aotus trivirgatus			0		0	0.9	0.2	0.6	0	0	0	0.2	0	0	0	0
Callicebus molloch	0	0	0	0			15.2		1.2		0				0	
Saguinus oedipus	0.6	0	1.8	1.1	0	7.2	1.4	4.1		0	0.5	0	0	0	0	0
S. nigricollis	0	0	0	0	8.6	16.4	7.3	26.7	0	5.2	0.9	0	0	0.7	0	1.1
S. mystax	0	0	0	0	0	0	0	0	0.6	0	0	0	0	0	0	0
S. spp.	0				0	0.9	0	0	0	0	0	0	0	0	0	0
Lemur macaco	0			0	0				0				0			
L. fulvus	0			0	1.2			0	0			0	0			0
L. catta	0			0	0			1.2	2.3			0	0			0
Galago argentatus	0			0	0			0	0			0	0			0
G. crassicaudatus			0	0	0.2			0	0			0	0			0
G. hybrid							0	0	0		0	0			0	0

Note. Footnotes on p. 16.

Table 2 (continued)

SPECIES	ENDOCRINE				NEOPLASIA				TRAUMA				UNSPECIFIED			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Pan troglodytes	0	0	0	0	0	0	0	0	0.5	5.3	0.5	1.0	0.5	1.5	0.4	1.0
Pongo pygmaeus	0	0	0	0	0	0	0	0	2.9	1.4	0	2.0	2.0	0	1.4	1.0
Papio papio	0	0	0	0	0	0	0	0	0	1.0	0.5	1.1	2.4	0.5	0	1.1
P. anubis	0	0	0	0	0	0	0	0	0.8	2.4	0.3	0.2	0	0	1.9	3.7
P. cynocephalus	0	0	0	0	0	0	0	0	2.9	1.0	0.4	2.5	0	1.0	0.4	0
P. spp.	0.3	0	0	0	0	0	0	0	10.7	2.7	5.1	7.3	1.3	0.2	0.6	1.0
Macaca fuscata	0				0				0				0			
M. arctoides	0	0.1	0.1	0	0	0	0	0	2.9	1.8	0.9	1.2	2.2	0.6	2.7	2.3
M. cyclopis	0	0	0	0.8	0	0	0	0	0	0	0	0.8	0	0	0	0.4
M. mulatta	0	0.1	0	0	0	0	0	0	1.3	1.4	2.5	1.8	0.9	1.1	1.0	0.8
M. fascicularis	0	0	0	0	0	0	0	0	0.9	1.0	0.7	2.7	0.5	0.1	0.5	0.2
M. nemestrina	0	0	0	0	0	0	0.1	0	4.8	3.6	3.9	2.7	0.8	0.1	0.1	0.3
M. radiata	0	0.2	0.1	0.2	0	0	0	0	0.3	0.4	0.9	0.9	1.8	1.5	2.1	1.6
M. hybrids	0	0	0	0	0	0	0	0	1.6	0	0	0	0	0	0	0
Cynopithecus niger	0	0	0	0	0	0	0	0	1.9	0	1.8	0	0	0	0	0
Cercocebus atys	0	0	0	0	0	0	0	0	1.2	1.1	1.1	1.4	0	0	0	0
Erythrocebus patas	0	0	0	0	0	0	0	0	0	1.6	0.8	2.7	0.5	1.2	0	0.4
Cercopithecus aethiops	0	0	0	0	0	0	0	0	11.6	2.5	2.4	7.4	1.0	1.5	1.8	0
Saimiri Sciureus	0	0	0	0	0	0	0	0	0.7	0.6	0.4	0.8	0.2	0.6	0.4	0.2
Cebus apella	0	0	0	0	0	0	0	0	0	0	0	2.3	0	0	0	0
C. spp.	0	0	0	0	0	0	0	0	0	0.3	0	0	0	0	0	0
Aotus trivirgatus	0	0	0	0	0	0.2	0	0	0	0	0	0.2	0	0.2	0	0.2
Callicebus moloch			0				0				0				6.1	
Saguinus oedipus	0	0	0	0	0	0.7	0	0	0	0	0	0.5	0	1.4	0	0.2
S. nigricollis	0	0	0	1.1	0	0	0	0	0	0	0	0	4.3	2.2	7.3	4.4
S. mystax	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S. spp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lemur macaco	0				0				0				0			
L. fulvus	0			0	0			0	0			0	0			0
L. catta	0			0	0			0	2.8			0	0			0
Galago argentatus	0			0	0			0	0			0	0			0
G. crassicaudatus	0			0	0			0	0.1			0	0			0
G. hybrid			0	0			0	0			0	3.6			0	0

Note. Footnotes on p. 16.

Table Footnotes

Table footnotes are used whenever the morbidity or mortality due to a specific cause exceeded 1% of the census figure.

Table 1. Includes study related deaths numbering: (a) 16, (b) 6, (c) 18, (i) 14, (j) 18, (k) 21. Includes tuberculosis numbering: (d) 14, (e) 19, (f) 37, (g) 77, (l) 5, (p) 7. Includes (h) 17 shigella. Includes abortions or stillborn numbering: (m) 29, (n) 16, (o) 18. Includes (q) 15 parasitism and (r) 24 soon after import.

Table 2. Includes tuberculin reactors numbering: (a) 14, (b) 7, (c) 96, (d) 58, (k) 2, (n) 7. Includes (c) 140 pneumonia reactors. Includes shigella and salmonella infections numbering: (e) 255 and 149, (f) 86 and 62, (g) 242 and 49, (h) 129 and 35, (j) 25 and 6, (l) 6 and 4, (m) 3 and 0, (o) 36 and 3 respectively. Includes (p) 55 with parasitism and (i) 34 stillborn or abortion.

* * *

LABORATORY PRIMATE NEWSLETTER QUARTERLY SURVEY: SECOND QUARTER 1978

The present report is one of a series summarizing data from the quarterly surveys being conducted by the *Laboratory Primate Newsletter*. The data in Tables 1 and 2 are based on reports from the following facilities: California, Delta, Washington (including the Field Station), Wisconsin, and Yerkes Regional Primate Research Centers, Laboratory for Experimental Medicine and Surgery in Primates (LEMSIP), National Institutes of Health (includes both the Primate Quarantine Unit and the Primate Research Units), and the Southwest Foundation for Research and Education. (See the April, 1979 issue for the previous survey report.)

TABLE 1. MORTALITY SUMMARY BY SYSTEM: APR. 1-JUNE 30, 1978

SPECIES	Generalized	Integumentary	Musculoskeletal	Respiratory	Cardiovascular	Digestive	Urogenital	Nervous	Endocrine	Neoplasia	Trauma	Unspecified
Pan troglodytes	4			1								3
Macaca arctoides	1		1									1
M. fascicularis	1			6		1					1	
M. mulatta	17		1	18		19	3	2			16	10
M. nemestrina	2			2		4					1	
M. radiata						4	1				1	1
Cynopithecus niger[a]	1											
Presbytis crystata				1								
Papio cynocephalus	1			1								
P. hamadryas											1	
P. spp.	7			5		2	1				4	23
Rhesus-Baboon Hyb.												1
Saimiri sciureus	2			3		1	3				2	
Cebus spp.												18
Saguinus mystax	1			1		3						1
S. spp.	7										1	8
TOTALS	37	0	2	38	0	34	8	2	0	0	27	66

[a] also referred to as *Macaca nigra*

TABLE 2. CENSUS, NUMBER OF BIRTHS, AND MORBIDITY SUMMARY BY SYSTEM: APR. 1-JUNE 30, 1978

SPECIES	Census	Births	Generalized	Integumentary	Musculoskeletal	Respiratory	Cardiovascular	Digestive	Urogenital	Nervous	Endocrine	Neoplasia	Trauma	Unspecified
Pan troglodytes	389	7		1		5		4	1	1	1		1	
Pongo pygmaeus	36			1	2	4		17						
Macaca arctoides	161	1		4	7			6	1				1	10
M. cyclopis	83	7											1	
M. fascicularis	452	11		2		2	1	13					5	1
M. fuscata		1												
M. mulatta	6340	590	30	70	38	12	14	177	57	14	4		108	35
M. nemestrina	1242	65	21	2	1	14	12	78	10	1		1	42	3
M. radiata	318	30	2	3	6		1	53	13	7			2	9
M. nigra[a]	25	1												
M. hybrids					1			1					2	
Erythrocebus patas	96	1						2						
Cercocebus atys	56	5												
Cercopithecus aethiops	41	2				1								
Papio cynocephalus	147	2		1		12	8		1				2	1
P. hamadryas	111	5												
P. papio	34	2		1	2	1		2	1	2			1	1
P. spp.	1645	66	19					8	1				113	3
Rhesus-Baboon Hybrid		2												
Saimiri sciureus	925	39	7	1	3		2	21	2				9	7
Ateles geoffroyi		1		1										
Cebus spp.	89	4												
Aotus griseimembra	80													
A. trivirgatus	157	4												
Saguinus mystax	156	18						2					4	
S. oedipus	463	13						1					1	
S. spp.	43	4												
Callithrix jacchus	47	16						1						
TOTALS	13,136	897	79	87	60	51	38	386	87	25	5	1	292	66

[a]also referred to as *Cynopithecus niger*

SCIENTISTS' CENTER FOR ANIMAL WELFARE FORMED

A new non-profit organization, the Scientists' Center for Animal Welfare, has been formed. The organization is dedicated "to the advancement of scientific knowledge about the humane treatment of animals and the welfare of all life." Membership is open to natural and social scientists, physicians, lawyers, educators, and others who use, study, or are concerned about animals. The catalyst for the formation of the Center was Dr. Jeremy Stone, Director of the Federation of American Scientists. He is a founding member of the Board along with Dr. Barbara Orlans, a physiologist with the National Institutes of Health, and Dr. Michael Fox, a veterinarian and ethologist who has become concerned with problems of animal welfare in recent years. He recently established the Institute for the Study of Animal Problems.

Functions of the Center are "to provide scholarly input, collect scientific facts, and make objective analyses of animal welfare issues." The Center has 3 major areas of interest: wild animals, domestic animals, and laboratory animals. The Center will compile, exchange, and disseminate scientific information relevant to animal welfare through its newsletter and other publications. In this way it will seek "to increase the knowledge and awareness of scientists, educators, and the public about the interrelationships and interdependencies between man and his fellow creatures."

Interested persons should write to the Scientists' Center for Animal Welfare, P. O. Box 3755, Washington, D.C. 20007.

* * *

NEWS ABOUT BANGLADESH RHESUS MONKEYS

Bangladesh terminated export of rhesus monkeys early this year, but it has been reported (*NSMR Bulletin*, 1979, *30*, [5], 3) that that government has expressed interest in taking steps leading to the resumption of this trade. Under the terms of the Convention on International Trade in Endangered Species of Wild Fauna and Flora, Bangladesh has requested assistance in conducting the kind of scientific survey of the primate populations in the wild necessary for compliance with the international treaty. It also wants further clarification from the United States that no Bangladesh monkeys will be used in military radiation experiments.

The U.S. Fish and Wildlife Service announced (*Endangered Species Technical Bulletin*, 1979, *4* [3], 5) that it has reviewed the available data on the rhesus monkey population in Bangladesh in response to a petition by Dr. Ken M. Green of the National Zoological Park. The Service decided that the data do not warrant further consideration of these monkeys for listing under the Endangered Species Act.

RECENT BOOKS AND ARTICLES
(Addresses are those of first authors)

Books

Nursery Care of Nonhuman Primates. Gerald C. Ruppenthal (Ed.) New York: Plenum, 1979. 333 pp. [Price: $32.50]

This volume presents information on health care and developmental guidelines for a number of species of nonhuman primates. Contents: SECTION I. PRENATAL INFLUENCES. Clinical indications for Caesarean section in the rhesus monkey (*Macaca mulatta*), by C. J. Mahoney, S. Eisele, & M. Capriolo; Effects of parental risk and prenatal stress on pregnancy outcome, by R. A. Holm; Gross placental morphology and pregnancy outcome in *Macaca nemestrina*, by C. E. Fahrenbruch, T. M. Burbacher, & G. P. Sackett; Serological materno-fetal incompatibility in non-human primates, by W. W. Socha & J. Moor-Jankowski; Prenatal protein and zinc malnutrition in the rhesus monkey, *Macaca mulatta*, by D. Strobel, H. Sandstead, L. Zimmerman, & A. Reuter. SECTION II. EARLY ASSESSMENT. Age determinants in neonatal primates: A comparison of growth factors, by M. Michejda & W. T. Watson; Assessment of skeletal growth and maturation of premature and term *Macaca nemestrina*, by C. E. Fahrenbruch, T. M. Burbacher, & G. P. Sackett; Age determination in macaque fetuses and neonates, by L. L. Newell-Morris; Serum bilirubin levels in full-term and premature *Macaca nemestrina*, by T. M. Burbacher & G. P. Sackett; Development of basic physiological parameters and sleep-wakefulness patterns in normal and at-risk neonatal pigtail macaques (*Macaca nemestrina*), by G. P. Sackett, C. E. Fahrenbruch, & G. C. Ruppenthal. SECTION III. HEALTH, DIET, AND GROWTH. Nursery-rearing of infant baboons, by G. T. Moore & L. B. Cummins; Growth and development of infant squirrel monkeys during the first six months of life, by J. N. Kaplan; Survey of protocols for nursery-rearing infant macaques, by G. C. Ruppenthal; Ponderal growth in colony- and nursery-reared pigtail macaques (*Macaca nemestrina*), by G. P. Sackett, R. A. Holm, & C. E. Fahrenbruch; Monitoring and apnea alarm for infant primates: Apparatus, by F. A. Spelman & C. W. Kindt; Monitoring and apnea alarm for infant primates: Practical and research applications, by C. W. Kindt & F. A. Spelman; Survey of neonatal and infant disease in *Macaca nemestrina*, by W. R.

In many cases, the original source of references in this section has been the Current Primate References prepared by The Primate Information Center, Regional Primate Research Center SJ-50, University of Washington, Seattle, WA 98195. Because of this excellent source of references, the present section is devoted primarily to presentation of abstracts of articles of practical or of general interest. In most cases, abstracts are those of the authors. Any author wishing to have a published paper abstracted in this section may do so by sending the Editor a copy of the reprint with a summary or abstract and indicating his desire on the reprint.

Morton, W. E. Giddens, Jr., & J. T. Boyce. SECTION IV. HOUSING AND SOCIAL DEVELOPMENT. Factors influencing survival and development of *Macaca nemestrina* and *Macaca fascicularis* infants in a harem breeding situation, by J. Erwin; The intellectual consequences of early social restriction in rhesus monkeys (*Macaca mulatta*), by J. P. Gluck; Experimental and husbandry procedures: Their impact on development, by G. C. Ruppenthal & G. P. Sackett. SECTION V. CARE OF EXOTIC SPECIES. Hand-rearing infant gibbons, by A. W. Breznock, S. Porter, J. B. Harrold, & T. G. Kawakami; Care of the infant and juvenile gibbon (*Hylobates lar*), by D. P. Martin, P. L. Golway, M. J. George, & J. A. Smith; Hand-rearing infant callitrichida (*Saguinus* spp and *Callithrix jacchus*), owl monkeys (*Aotus trivirgatus*), and capuchins (*Cebus albifrons*), by J. L. Cicmanec, D. M. Hernandez, S. R. Jenkins, A. K. Campbell, & J. A. Smith; Hand-rearing *Saguinus* and *Callithrix* genera of marmosets, by J. D. Ogden; Weight gains and sequence of dental eruptions in infant owl monkeys (*Aotus trivirgatus*), by R. D. Hall, R. J. Beattie, & G. H. Wyckoff, Jr.

Mycobacterial Infections of Zoo Animals. Richard J. Montali (Ed.) Washington, DC: Smithsonian Institution Press, 1978. 275 pp. [Price: Hard-cover, $12.50. Soft cover, $7.95]

This is the proceedings of a symposium held at the Conservation and Research Center, National Zoological Park, Smithsonian Institution, October 6-8, 1976. This volume brings together information on the pathologic mechanisms, diagnosis, treatment, and control of mycobacterial infections in nondomesticated animals, including nonhuman primates. Mycobacterial infections include: tuberculosis, leprosy, Johne's disease, and other chronic, wasting diseases. Problems of communicability of the diseases are discussed in a section on regulatory and public-health significance of outbreaks in research institutions, zoological parks, and other facilities involved with animals. Articles of particular interest to primate research workers include: Tuberculosis in nonhuman primates--An overview, by D. M. Renquist & R. A. Whitney; Prevalence of tuberculosis and mycobacterial diseases in some European zoos, by T. A. Schliesser; Historical aspects of tuberculosis in the Philadelphia Zoo, by R. L. Snyder; Occurrence of tuberculosis in the zoo collection of the Zoological Society of San Diego, 1964-1975, by L. A. Griner; Trends in the incidence of Simian tuberculosis, by A. F. Kaufmann & D. C. Anderson; Mycobacteria isolated from exotic animals, by C. O. Thoen, W. D. Richards, & J. L. Jarnagin; Pathogenesis of pulmonary tuberculosis in man and animals: Protection of personnel against tuberculosis, by A. M. Dannenberg, Jr.; Mechanisms of cell-mediated immunity, tolerance, and anergy, by C. C. Muscoplat; Isolation and identification of mycobacteria from tissues of exotic animals, by C. O. Thoen; Adaptation of a fluorescent staining method for the detection of acid-fast bacilli in exotic animals, by E. M. Himes; Tuberculins for use in animals, by R. D. Angus; BCG vaccination in rhesus monkeys: Study of skin hypersensitivity and duration of protective immunity, by R. C. Good & N. E. McCarroll; Tuberculin testing in nonhuman primates: OT vs PPD, by R. M. McLaughlin & G. E. Marrs; Tuberculin testing in

Great Apes, U. S., by G. Kuhn III & M. J. Selin; Lymphocyte transformation as a diagnostic tool in tuberculosis of exotic animals, by D. W. Johnson, F. P. Soper, & P. M. Rakich; *Mycobacterium kansasii* infection in rhesus monkeys, by D. A. Valerio, D. W. Dalgard, R. C. Good, R. W. Voelker, & N. E. McCarroll; *Mycobacterium bovis* in nonhuman primates, by R. M. McLaughlin; *Mycobacterium avium* enteritis in nonhuman primates, by D. H. Sesline; Tuberculosis in a band of imported hamadryas baboons, by M. S. Silberman; Worldwide zoonotic aspects of tuberculosis, by P. A. Chaloux; Mycobacterial infections of zoo animals: Health implications for humans, by L. S. Farer; Tuberculosis control in nonhuman primate colonies, by A. F. Kaufmann & D. C. Anderson; and Regulations needed to control spread of tuberculosis in nondomestic animals, by L. D. Konyha.

The Study of Prosimian Behavior. G. A. Doyle and R. D. Martin (Eds.) London: Academic Press, 1979. 696 pp. [Price: $49.50]

The aim of this book is to provide a comprehensive state-of-the-field picture of prosimian behavior. Contents: Classification of the prosimians, by J.-J. Petter & A. Petter-Rousseaux. Phylogenetic aspects of prosimian behavior, by R. D. Martin. Reproductive physiology and behavior in prosimians, by R. N. Van Horn & G. G. Eaton, Maternal behavior in prosimians, by P. H. Klopfer & K. J. Boskoff. Development of behavior in prosimians with special reference to the lesser bushbaby, *Galago senegalensis moholi*, by G. A. Doyle. Learning and intelligence in prosimians, by B. J. Wilkerson & D. M. Rumbaugh. Vocal communication in prosimians, by J.-J. Petter & P. Charles-Dominique. Diet and ecology of prosimians, by C. M. Hladik. Spatial distribution and ranging behavior in lemurs, by J. I. Pollock. The role of vision in prosimian behavior, by G. Pariente. Olfactory communication in prosimians, by A. Schilling. Prosimian locomotor behavior, by A. Walker. Field studies of lorisid behavior: Methodological aspects, by P. Charles-Dominique & S. K. Bearder. Outline of the behavior of *Tarsius bancanus*, by C. Niemitz.

Primate Ecology: Problem-Oriented Field Studies. Robert W. Sussman (Ed.) New York: Wiley, 1979. 596 pp. [Price: $14.95]

This book reprints articles describing research which has taken primarily a problem-oriented, as opposed to a natural history, approach; that is, the book deals with research which has been concerned with answering some specific question usually based on general ecological theory or on data gathered during natural history research. Contents: PART 1. FIELD STUDIES. PROSIMIANS. INTRODUCTION: FIELD STUDIES ON PROSIMIANS. Ecology and feeding behaviour of five sympatric lorisids in Gabon, by P. Charles-Dominique; Intra-specific variation in the social organization and ecology of *Propithecus verreauxi*, by A. Richard; Ecological distinctions in sympatric species of *Lemur*, by R. W. Sussman. NEW WORLD MONKEYS. INTRODUCTION: FIELD STUDIES ON NEW WORLD MONKEYS. Habitat utilization in two species of *Callicebus*, by W. G. Kinzey & A. H. Gentry; Feeding and activity of *Cebus* and *Saimiri* in a

Colombian forest, by R. W. Thorington, Jr.; Social and ecological contrasts between four taxa of neotropical primates, by L. L. Klein & D. J. Klein. OLD WORLD MONKEYS. INTRODUCTION: FIELD STUDIES ON OLD WORLD MONKEYS. Arboreal Old World Monkeys. The distribution of primates in the Gold Coast, by A. H. Booth; Polyspecific associations and niche separation of rain-forest anthropoids in Cameroon, West Africa, by J. S. Gartlan & T. T. Struhsaker; Comparison of the behavior and ecology of Red Colobus and Black-and-White Colobus monkeys in Uganda: A summary, by T. T. Struhsaker & J. F. Oates. Terrestrial Old World Monkeys. Ecological relations and niche separation between sympatric terrestrial primates in Ethiopia, by R. I. M. Dunbar & E. P. Dunbar; Forest living baboons in Uganda, by T. E. Rowell; Patterns of movement in open country baboons, by R. S. O. Harding; Baboons, space, time, and energy, by S. A. Altmann. APES. INTRODUCTION: FIELD STUDIES ON APES. The Siamang and the Gibbon in the Malay Peninsula, by D. J. Chivers; The Borneo orang-utan, by D. A. Horr; Some behavioral comparisons between the chimpanzee and mountain gorilla in the wild, by V. Reynolds. PART 2. THEORETICAL PAPERS. INTRODUCTION: RELATIONSHIPS BETWEEN ECOLOGY AND SOCIAL STRUCTURE. A comparison of the ecology and behavior of monkeys and apes, by I. DeVore; Evolution of primate societies, by J. H. Crook & J. S. Gartlan; Dimensions of a comparative biology of primate groups, by H. Kummer; Correlates of ecology and social organization among African cercopithecines, by T. T. Struhsaker; Problems of social structure in forest monkeys, by F. P. G. Aldrich-Blake; Energy relations and some basic properties of primate social organization, by W. W. Denham; The relations between ecology and social structure in primates, by J. F. Eisenberg, N. A. Muckenhirn, & R. Rudran; Survival, mating and rearing strategies in the evolution of primate social structure, by J. D. Goss-Custard, R. I. M. Dunbar, & F. P. G. Aldrich-Blake; Primate social organisation and ecology, by T. H. Clutton-Brock; Ecology, diet, and social patterning in Old and New World primates, by C. M. Hladik; Mammalian social systems: Structure and function, by J. H. Crook, J. E. Ellis, & J. D. Goss-Custard; Nectar-feeding by prosimians and its evolutionary and ecological implications, by R. W. Sussman.

Neurophysiology of Cortical Connections in Primates. [In Russian] G. A. Khasabov. Moscow: Meditsina, 1978. 184 pp.

This monograph is a summary of the literature and experimental investigations on topographical organization and functional properties of afferent and efferent connections of neocortex with hippocampal and striatal nuclei and also the interconnections of various neocortical areas. Evoked potentials and the character of propagated seizure activity were used to assess the physiological properties of these connections. The results permitted judgements to be made about the ability of various connections to conduct impulses. The general constructions of corticopetal and corticofugal connections of monkey cortex is considered and topographical and neurophysiological properties of primate brains are compared with corresponding properties of other mammalian brains. The participation of the connections studied by the author in the processes

of cerebral structure interactions and their probable role in the organization of complex behavior is discussed.

Bibliographies

The aged nonhuman primate. (2nd ed.) Benella Caminiti. Seattle: Primate Information Center, 1979. 15 pp. [Price: $5.00. Send orders to: Primate Information Center, Regional Primate Research Center (SJ-50), University of Washington, Seattle, WA 98195.]

Bibliography on tuberculosis in nonhuman primates, 1960-1978. Benella Caminiti. Seattle: Primate Information Center, 1979. 19 pp. [Price: $5.00. Order information same as in previous reference.]

Disease

Mycobacterium scrofulaceum infection in *Erythrocebus patas* monkeys. Renquist, D. M. & Potkay, S. (National Inst. of Hlth., Div. of Res. Serv., Vet. Res. Br., Bethesda, MD 20014) *Laboratory Animal Science,* 1979, *29*, 97-101.

M. scrofulaceum was cultured from 2 of 7 tuberculin reactors in a group of 12 *E. patas* monkeys. One monkey reacted atypically to 0.1 ml of 2.5 mg veterinary tuberculin after having shown no reaction to four previous tests administered at 2-week intervals. The reaction consisted of edema with no induration or erythema at 24 hours and was completely dissipated at 36 hours. Responses to additional tests using veterinary tuberculin (2.5 mg) and *M. bovis* purified protein derivative (1.1 mg) ranged from negative to slightly edematous. Radiographs were suggestive of pulmonary tuberculosis. Extensive granulomas were observed in the lungs, liver and spleen at necropsy. *M. scrofulaceum* was isolated from lung and liver granulomas in this animal and from lung granulomas in another. The atypical skin hypersensitivity and organism isolation from multiple organs suggested *M. scrofulaceum* as the etiologic agent in these animals. Reactions of 6 other *E. patas* to veterinary tuberculin (2.5 mg) ranged from edematous to indurated.

Spontaneous preeclamptic toxemia of pregnancy in the patas monkey (*Erythrocebus patas*). Palmer, A. E., London, W. T., Sly, D. L., & Rice, J. M. (Sect. on Exp. Path., Infect. Dis. Br., National Inst. of Neurol. and Comm. Disorders and Stroke, NIH, Bldg. 36, Rm 5D-06, Bethesda, MD 20014) *Laboratory Animal Science,* 1979, *29*, 102-106.

A disease characterized by edema, proteinuria, hypoproteinemia and hypertension was seen in late gestation in patas monkeys. The initial sign was edema of the perineum, ankles and lower trunk. The onset was abrupt, occurring 7 days or less prepartum. The affected animals were not depressed, and convulsions were not seen. In 6 of the 98 pregnancies during a 1-year period, symptoms of the disease were present. The highest incidence was manifested by primiparous

animals with 3 of 36 pregnancies affected. Two of 38 second pregnancies and 1 of 24 third pregnancies were also affected. Five of the animals recovered spontaneously and were normal 14 days postpartum. Edema persisted for 30 days in one female. This animal continued to be hypertensive and had persistent mild proteinuria and hypoproteinemia. She was killed approximately 1 year postpartum due to severe renal disease. The spontaneous disease seen in patas monkeys resembled toxemia of pregnancy in humans more closely than the experimentally induced disease in other animals.

Isolation of a cytomegalovirus from salivary glands of white-lipped marmosets (*Saguinus fuscicollis*). Nigida, S. M., Falk, L. A., Wolfe, L. G., & Deinhardt, F. (Dept. of Microbiol. Rush-Presbyterian-St. Luke's Med. Ctr., 1753 West Congress Pkwy., Chicago, IL 60612) *Laboratory Animal Science*, 1979, *29*, 53-60.

A viral agent, designated SSG, was isolated from two *Saguinus fuscicollis*. Electron microscopy revealed intranuclear herpesvirus nucleocapsids and intracytoplasmic and extracellular enveloped particles. Infected cells stained with hematoxylin and eosin contained eosinophilic intranuclear and cytoplasmic inclusion bodies. SSG could be passaged in cell culture only using viable whole cells; infectious cell-free virus was not detected in either culture supernatants or cell lysates. SSG replicated only in marmoset fibroblastic cell cultures. Plasma antibodies to SSG were detected by indirect immunofluorescence assays in 16 of 56 (28.6%) adult wild-caught marmosets but were absent in 40 colony-born, hand-reared marmosets. Antigenic cross-reactivity of SSG with a rhesus monkey (*Macaca mulatta*) cytomegalovirus (bidirectional) and with a human cytomegalovirus (unidirectional) was also demonstrated by indirect immunofluorescence assays. SSG was identified as a herpesvirus by morphology and was classified as a cytomegalovirus by its site of isolation, biologic properties *in vitro*, and antigenic characteristics.

Therapy of filariasis in tamarins. Tankersley, W. G., Richter, C. B., & Batson, J. S. (Med. & Hlth. Sci. Div., Oak Ridge Assoc. Univ., Oak Ridge, TN 37830) *Laboratory Animal Science*, 1979, *29*, 107-110.

Seven cotton-topped tamarins (*Saguinus oedipus oedipus*) and one male white-lipped tamarin (*Saguinus fuscicollis nigrifrons*) were selected for treatment of large numbers of unidentified microfilariae found in repeated blood samples over extended periods. A regimen of thiacetarsamide sodium (0.22 ml/kg twice daily for 2 days) plus levamisole phosphate (11 mg/kg/day for 10 days) was effective in eliminating the microfilariae from the blood in seven of eight tamarins. No serious side effects resulted from the treatment. All of the animals were initially freed of circulating microfilariae after treatment, and five have remained microfilaria-negative for 1 year. Two of the tamarins died of causes unrelated to filariasis and were microfilaria-negative before death. One tamarin remained microfilaria-positive after two courses of this treatment.

Clinical description of tetanus in squirrel monkeys (*Saimiri sciureus*). Kessler, M. J. & Brown, R. J. (Caribbean Prim. Res. Ctr., PO Box 297, Sabana Seca, PR 00749) *Laboratory Animal Science*, 1979, *29*, 240-242.

Nineteen cases of clinical tetanus developed in Bolivian squirrel monkeys (*Saimiri sciureus*) which were housed in outdoor corrals with soil-based floors. The disease was initially characterized by stiffness in gait followed by extensor rigidity, trismus and opisthotonus. Eleven of the 19 monkeys (58%) had evidence of external wounds. The case fatality rate was 100%. Tetanus accounted for 12% of adult female and 19% of adult male mortalities in the colony. Immunization with tetanus toxoid was effective in reducing the incidence of tetanus.

Fatal parasitism among free living bushbabies (*Galago crassicaudatus*). Evans, L. B. (25 Roehampton Way, 4051 Durban North, Republic of South Africa) *Journal of the South African Veterinary Association*, 1978, *49*, 66.

Four cases of severe parasitism due to nematode parasites (*Primasubulura otolicini*) in adult bushbabies in Inanda Game Park are described.

Physiology

Comparative normal levels of serum triiodothyronine and thyroxine in nonhuman primates. Kaack, B., Walker, L., Brizzee, K. R., & Wolf, R. H. (Delta Reg. Prim. Res. Ctr., Covington, LA 70433) *Laboratory Animal Science*, 1979, *29*, 191-194.

Normative values were obtained for triiodothyronine and thyroxine from four species of Old World primates (chimpanzees, and rhesus, African green, and talapoin monkeys) and a single species of New World primate (squirrel monkeys) represented by two subspecies, Colombian and Bolivian. The Bolivian squirrel monkeys exhibited the lowest values for both triiodothyronine and thyroxine. Male talapoins had the highest levels of thyroxine. Significant differences were found in levels of triiodothyronine and thyroxine between males and females of the same species and between the two subspecies of squirrel monkeys. Triiodothyronine: thyroxine ratios were consistently lower in the males of all species examined.

Baseline blood chemistry determinations in the squirrel monkey (*Saimiri sciureus*). Beland, M. F., Sehgal, P. K., & Peacock, W. C. (New England Reg. Prim. Res. Ctr., Harvard Med. Sch., Southborough, MA 01772) *Laboratory Animal Science*, 1979, *29*, 195-199.

Sera from 129 squirrel monkeys were analyzed for 15 chemical constituents. The values obtained were then analyzed for statistical significance using the following sets of variables: (1) colony-bred versus noncolony-bred, (2) karyotype, (3) vendor, (4) sex and (5) dietary iodine supplementation versus nonsupplementation. Calcium, inorganic phosphorous, albumin, uric acid, blood urea nitrogen, glucose, alkaline phosphatase and potassium were high in colony-bred animals. Cholesterol, total protein and chloride were lower in colony-bred animals than in noncolony-bred animals. No differences were seen in total bilirubin,

lactic dehydrogenase, serum glutamic oxaloacetic transaminase and sodium. When the noncolony-bred animals were separated by karyotype, total protein was higher and chloride was lower between animals from Peru versus from Guyana. Colombian animals had total protein values lower than Peruvian and lactic dehydrogenase values higher than Peruvian. Colony-bred Peruvian monkeys had serum glutamic oxaloacetic transaminase values higher than colony-bred Colombian monkeys. No differences were observed between monkeys from different vendors. Chemical constituents higher between noncolony-bred males and females were calcium and alkaline phosphatase. There were no differences observed for colony-bred males and females. Dietary iodine supplementation appeared to increase both total bilirubin and calcium.

Total lung capacity of baboons and humans determined by planimetry of radiographs. McCullough, B., Wackwitz, R., & Johanson, W. G., Jr. (B. McCullough, B. Wackwitz, & W. G. Johanson, Jr., Pulmonary Dis. Sect. (111E), Audie L. Murphy Mem. Vet. Hosp., 7400 Merton Minter Blvd., San Antonio, TX 78284) *Laboratory Animal Science*, 1979, *29*, 61-67.

Total lung capacity and radiographic lung area of 25 young and 7 aged baboons (*Papio cynocephalus*) and 7 nonsmoking young adult men were measured. For all subjects, total lung capacity and radiographic lung area raised to the 3/2 power were shown to be highly correlated (r=0.995). Total lung capacity and radiographic lung area were also highly correlated with height, weight and arm span of young baboons and men ($r > 0.92$), but the lungs of aged baboons were disproportionately larger.

O processo da muda dos pêlos em *Leontopithecus r. rosalia* (Linnaeus, 1766) (Callitrichidae, primates). Coimbra-Filho, A. F. & Maia, A. De A. (Dept. de Conservação Ambiental, Estrada da Vista Chinesa, 741 - Alto da Boa Vista, C.P. 23011, 20.000 Rio de Janeiro-RJ. Brasil) *Rev. Brasil. Biol.*, 1979, *39*, 83-93.

In *L. r. rosalia* (golden lion tamarin) the pelage is periodically substituted by regeneration and growth cycles which are followed by periods of stability and aging and after which the old coat is again replaced. Aspects of this moulting and other facts related to it are discussed.

Breeding

Some effects of living conditions upon the pattern of growth in the stumptail macaque (*Macaca arctoides*). Faucheux, B., Bertrand, M., & Bourlière, F. (Unite Tech. Gerontol., INSERM, U118, F-75016 Paris, France) *Folia Primatologica*, 1978, *30*, 220-236.

Somatometric and weight measurements of stumptail macaques bred in various environmental conditions are presented. Environmental parameters may influence the pattern of growth in slowing down the 'growth rate' of monkeys bred in a restricted laboratory environment as compared with monkeys bred in 'optimal' captive conditions: their subadult and adult linear dimensions are smaller.

The interaction of behavior and reproductive cycles in patas monkeys. Rowell, T. E. & Hartwell, K. M. (Dept. of Zool., Univ. of CA at Berkeley, CA 94720) *Behavioral Biology*, 1978, *24*, 141-167.

Reproductive cycles of females in a breeding group of 10 to 18 patas monkeys were followed over 5 years using vaginal smear and lavage techniques. Two hundred hours of behavioral observations were made during the same period in order to determine the interactions.

Ecology and Field Studies

A note on adoption of two rhesus juveniles by a langur group. Singh, R. K. & Sen, N. N. (Udai Pratap College, Gorakhpur University, Varanasi, India) *Journal of Scientific Research Banaras Hindu University*, 1977-78, *28*, 135-138.

Two rhesus juveniles were found to be living with a langur group in Balrampur Forest of Uttar Pradesh. The rhesus juveniles were accepted by the langur group. The behavior of the rhesus juveniles appeared to be similar to those of langur behavior in several aspects.

Instruments and Techniques

Immobilization of a chronic intravenous catheter in the saphenous vein of African green and rhesus monkeys. Conti, P. A., Nolan, T. E., & Gehret, J. (Merck Sharp & Dohme Res. Labs., West Point, PA 19486) *Laboratory Animal Science*, 1979, *29*, 234-236.

Long-term immobilization of intravenous catheters in the saphenous vein of nonhuman primates was accomplished through the application of a lightweight fiberglass tape casting system developed for human orthopedic use. The advantages of this technique are that it (a) permits successful retention of superficial vein catheters, (b) eliminates the need for deep vessel surgical procedures when only blood collection or perfusion protocols are being implemented and (c) permits repeated use of a single preparation without maintaining the animal under rigid restraint.

Nasogastric intubation technique for bile sampling in the baboon (*Papio ursinus*). Spalton, P. N. & Clifford, J. M. (Dept. of Metabolic Studies, Res. & Develop. Div., G. D. Searle & Co., PO Box 53, Lane End Rd., High Wycombe, Bucks, HP12 4HL, England) *Laboratory Animal Science*, 1979, *29*, 237-239.

A duodenal tube was introduced into the duodenum of the fasted baboon via the nasal passage. After the application of vacuum for several minutes, the baboon received an intravenous injection of pancreozymin and cholecystokinin which caused contraction of the gall bladder. Aspiration of bile sample was carried out via the duodenal tube.

A versatile primate cage for a multiple use facility. Stickrod, G. (Dept. of Psychology, Univ. of Oregon, Eugene, OR 97403) *Laboratory Animal Science*, 1979, *29*, 121-122.

A mobile-transport-squeeze cage for primates was constructed. The

cage contained a clear plastic guillotine door, squeeze apparatus, ventilation holes and locking casters. The squeeze apparatus could be operated by one person.

Conservation

Conservation and management of wild primate populations. Blood, B. D. & Southwick, C. H. (Inter-Agency Primate Steering Committee, NIH Bldg. 14G, Rm 102, Bethesda, MD 20014) *BioScience*, 1979, *29*, 233-237.

This paper summarizes the findings of an ad hoc advisory group to the Inter-Agency Primate Steering Committee, National Institutes of Health, which met on October 21, 1977. Topics include definitions and priorities, motivation for conservation (appeals to the conservation ethic versus to economic benefits), wildlife management programs (successful approaches, prominent setbacks or failures, and transferability of current conservation theory and management practices to primates), manpower development and training, research and information needs, and recommendations and conclusions regarding needs for research, program development, manpower development and implementation of the recommendations.

World's vanishing primates. Kavanagh, M. (Fac. of Vet. Med. & Anim. Sci., U of Pertanian Malaysia, Serdang, Selangor, Malaysia) *Nature (London)*, 1979, *277*, 432-434.

This note briefly summarizes some of the discussions that took place, reports that were given, etc. at the VIIth Congress of the International Primatological Society in Bangalore, India, January 6-12, 1979 that were related to primate conservation.

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