omponent could counteract nasal drifts, and thus our findings provide support or the hypothesis that this muscle could render monkeys resistant to the evelopment of esodeviations. Dissections of the orbits from two naturally sotropic monkeys also are consistent with this hypothesis. The accessory ateral rectus muscle was absent in one of them and abnormally small in the ther. Humans do not have an accessory lateral rectus muscle, and we speculate hat the high prevalence of esodeviations in humans may be related to an volutionary loss of this muscle system.
N CONTRACT OR GRANT NUMBERS: RR00165RRNCRR
N MEDLINE ACCESSION NUMBER: 90285027

20 of 24

I TITLE: Sialolithiasis in two chimpanzees.
J AUTHOR(S): Orkin-JL; Braswell-LD
O SOURCE (BIBLIOGRAPHIC CITATION): J-Am-Vet-Med-Assoc. 1990 May 15; 196(10): 651-3
SSN INTERNATIONAL STANDARD SERIAL NUMBER: 0003-1488
A LANGUAGE OF ARTICLE: ENGLISH
B ABSTRACT: Sialoliths were found in the duct of the submandibular salivary land in 2 of 50 chimpanzees (Pan troglodytes) examined, and were surgically emoved. Recovery was uncomplicated. Although sialoliths are uncommon in omestic, zoo, and laboratory animals, the signs of sialolithiasis may mimic ther problems.
N CONTRACT OR GRANT NUMBERS: RR00165RRNCRR; R01DE06436DENIDR; 01DE05967DENIDR
N MEDLINE ACCESSION NUMBER: 90270089

21 of 24

I TITLE: Sex differences in aversive and appetitive conditioning in two trains of rats.
J AUTHOR(S): Saavedra-MA; Abarca-N; Arancibia-P; Salinas-V
O SOURCE (BIBLIOGRAPHIC CITATION): Physiol-Behav. 1990 Jan; 47(1): 107-12
SSN INTERNATIONAL STANDARD SERIAL NUMBER: 0031-9384
A LANGUAGE OF ARTICLE: ENGLISH
B ABSTRACT: In order to examine sex differences in non sexual behavior, 40 ats of each sex from two strains (gray, A x C and albino, Sprague-Dawley) were rained, using different experimental procedures. In Experiment I, aversive onditioning in a one-way (easy task) and a two-way (difficult task) active voidance task was examined. Results consistently showed that males of both trains were inferior to females in the acquisition of the two-way avoidance ask. A significant interaction between sex of both strains and the difficulty f the task was found. In Experiment II, rats were trained in a Sutherland pparatus in an easy (black vs. white) and a difficult (horizontal vs. ertical) visual discrimination task, using appetitive reinforcement; no ifferences between sexes were observed. A significant interaction, however, as found between strain and task, indicating a lower performance of the A x C train in the difficult task. The results are discussed within the theoretical ramework of the Yerkes-Dodson Law, which states a relationship between drive evel, performance and different degrees of task difficulty.
N MEDLINE ACCESSION NUMBER: 90222285

22 of 24

I TITLE: Acquisition of fertilizing capacity by chimpanzee sperm.
J AUTHOR(S): Gould-KG; Young-LG
O SOURCE (BIBLIOGRAPHIC CITATION): Folia-Primatol-Basel. 1990; 54(1-2): 105-8

SSN INTERNATIONAL STANDARD SERIAL NUMBER: 0015-5713
.A LANGUAGE OF ARTICLE: ENGLISH
N CONTRACT OR GRANT NUMBERS: RR00165RRNCRR; HD16831HDNICHD
.N MEDLINE ACCESSION NUMBER: 90215578

23 of 24

'I TITLE: A high resolution SE-I SEM assessment of diimidoester fixed himpanzee sperm.
.U AUTHOR(S): Apkarian-RP; Young-LG; Gould-KG
:O SOURCE (BIBLIOGRAPHIC CITATION): J-Electron-Microsc-Tech. 1990 Feb; 14(2): 77-8
:SSN INTERNATIONAL STANDARD SERIAL NUMBER: 0741-0581
.A LANGUAGE OF ARTICLE: ENGLISH
.N MEDLINE ACCESSION NUMBER: 90155506

24 of 24

'I TITLE: High resolution SE-I SEM study of enamel crystal morphology.
U AUTHOR(S): Apkarian-RP; Gutekunst-MD; Joy-DC
:O SOURCE (BIBLIOGRAPHIC CITATION): J-Electron-Microsc-Tech. 1990 Jan; 14(1): 0-8
SSN INTERNATIONAL STANDARD SERIAL NUMBER: 0741-0581
.A LANGUAGE OF ARTICLE: ENGLISH
.B ABSTRACT: Until recently high resolution TEM was the only imaging mode apable of probing the atomic lattice structure of crystals composing tooth namel. Studies designed to determine the polyhedral shape of normal enamel rystals and initiation of carious lesions in enamel crystals were hampered and imited by interpretation of two-dimensional TEM images from thin section and reeze fracture replica specimens lacking depth of field. The newly developed E-I signal mode for SEM (SE-I/SE-II ratio) can produce images of enamel rystals approaching beam diameter dimensions (0.7-2.0 nm), rivaling the esolution of the TEM technique and generating topographic contrasts for three imensional imaging at very high magnification (approximately 1,000,000X). ltrathin chromium (Cr) films generate enriched high resolution SE-I contrasts f enamel crystal surfaces and when imaged using an immersion lens field mission SEM operated at high voltage (20-30 KeV) produce unsurpassed opographic contrasts. Since the grain size of Cr is below the resolution of ny SEM and is ultrathin (approximately 1 nm), then SE-I images can provide a ore accurate representation of enamel crystal structure than TEM ethodologies. Our SE-I SEM observations of normal human enamel crystals reveal ractured spicules which contain angled flat surfaces delineated by a prominent nm wide SE-I edge brightness contrast. Although microscopic observations ften show crystals which are hexagonal in cross-section, in both SEM and TEM any other growth habits, including rectangular or irregular crystals (30-40 nm n width) which contain "notches," are also observed. More detailed orphological studies are therefore required to determine the most likely habit lanes and their relevance to the function of the enamel crystals.(ABSTRACT RUNCATED AT 250 WORDS)
N CONTRACT OR GRANT NUMBERS: RR00165RRNCRR
.N MEDLINE ACCESSION NUMBER: 90132969

o. Records Request
: 18 YERKES

1 of 18

I TITLE: Spectrum of disease in macaque monkeys chronically infected with IV/SMM.
U AUTHOR(S): McClure-HM; Anderson-DC; Fultz-PN; Ansari-AA; Lockwood-E; rodie-A
O SOURCE (BIBLIOGRAPHIC CITATION): Vet-Immunol-Immunopathol. 1989 May; 21(1): 3-24
SSN INTERNATIONAL STANDARD SERIAL NUMBER: 0165-2427
A LANGUAGE OF ARTICLE: ENGLISH
B ABSTRACT: Twelve rhesus and one pig-tailed macaque have been monitored for 8-41 months following experimental infection with 10(4) TCID of SIV/SMM. welve of the 13 animals became virus positive and seroconverted within 3 to 6 eeks of exposure; the remaining animal seroconverted at 6 months, but has emained virus negative. Six of the 13 animals (46%) died between 14 and 28 onths post-infection, following prolonged clinical disease characterized by hronic diarrhea and weight loss, peripheral lymphadenopathy and hemogram bnormalities. Histologic findings ranged from prominent follicular hyperplasia o severe lymphoid depletion, with lymphoid tissues often showing an infiltrate f syncytial giant cells. One animal had intestinal cryptosporidiosis and two ad brain lesions comparable to those seen in AIDS encephalopathy in humans. hree of the remaining seven animals have an ARC-like disease and are showing radual deterioration of their clinical condition. These animals, as well as nimals that died, had progressive decreases in CD4+ cells and CD4+/CD8+ cell atios. These observations further document the marked clinical, pathologic and mmunologic similarities between human AIDS and the SIV-infected macaque model.
N CONTRACT OR GRANT NUMBERS: RR00165
N MEDLINE ACCESSION NUMBER: 89370216

2 of 18

I TITLE: The biology and immunopathology of simian immunodeficiency virus nfection.
U AUTHOR(S): Fultz-PN; Anderson-DC
O SOURCE (BIBLIOGRAPHIC CITATION): Curr-Opin-Immunol. 1989-90 Feb; 2(3): 03-8
SSN INTERNATIONAL STANDARD SERIAL NUMBER: 0952-7915
A LANGUAGE OF ARTICLE: ENGLISH
N CONTRACT OR GRANT NUMBERS: RR00165
N MEDLINE ACCESSION NUMBER: 90234250

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I TITLE: Postnatal development of neuropeptide Y-like immunoreactivity in rea 17 of normal and visually deprived rhesus monkeys.
U AUTHOR(S): Tigges-M; Tigges-J; McDonald-JK; Slattery-M; Fernandes-A
O SOURCE (BIBLIOGRAPHIC CITATION): Vis-Neurosci. 1989; 2(3): 315-28
SSN INTERNATIONAL STANDARD SERIAL NUMBER: 0952-5238
A LANGUAGE OF ARTICLE: ENGLISH
B ABSTRACT: Immunocytochemical methods were used to examine neuropeptide Y NPY) immunoreactive neurons and fibers in area 17 of rhesus monkeys during the irst year of life. NPY-immunoreactive (+) neurons are nonpyramidal cells which re either multipolar, bipolar, or bitufted in shape. They occur most

requently in layer 6 and the subjacent white matter, are sparser in the upragranular layers, and absent from layer 4C. Labeled somata in the upragranular layers are smaller compared to those in layer 6 and the white atter. A typical axon originates from the NPY+ soma or from a primary dendrite nd frequently is varicose. Distribution and morphologies of NPY+ neurons in rea 17 of infants are similar to those of adult monkeys. Thus, it seems that PY+ neurons in rhesus monkeys are mature from birth. NPY+ fibers occur in area 7 from birth; however, they differ in density and distribution from those of lder infant and adult monkeys. At birth, a prominent fiber plexus is found in ne deepest part of layer 1, and another in the white matter. Immunoreactive rocesses are sparse in the remaining cortical gray, except for some vertical ibers extending from pia to white matter. By 4 months of age, labeled fibers orm a coarse network in layers 2, 3, 5, and 6. In addition, a distinct plexus xtends through layers 4B, 4A, and the lowest aspect of layer 3. Also, a thin mmunoreactive fiber band is found at the bottom of layer 4C. In the remainder f layer 4C, NPY+ fibers are scant. The supragranular layers also exhibit a nique immunoreactive "snarl" of fibers. Increases in density of NPY+ processes n the older infants are gradual so that between 7 and 13 months of age, NPY+ ibers appear to have achieved adultlike densities. These observations indicate nat NPY+ fibers in area 17 of newborn rhesus monkeys undergo postnatal aturation which reaches a plateau around 4 months of age. After monocular isual deprivation from birth to 4 months of age, either by eyelid suture or by cclusion with an opaque contact lens, density and distribution of NPY+ neurons nd fibers, including snarls, appear similar to those of age-matched undeprived nfants. Thus, disruption of the normal binocular input does not seem to arrest ne maturation of the NPY system in area 17 of rhesus monkeys during a ensitive period of early postnatal development.
N CONTRACT OR GRANT NUMBERS: EY06001; HD19731; HD00727
N MEDLINE ACCESSION NUMBER: 91137426

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T TITLE: Nonhuman primates and the acquired immunodeficiency syndrome: a ntion of necessity.
J AUTHOR(S): Fultz-PN
O SOURCE (BIBLIOGRAPHIC CITATION): J-Med-Primatol. 1989; 18(2): 73-83
SSN INTERNATIONAL STANDARD SERIAL NUMBER: 0047-2565
A LANGUAGE OF ARTICLE: ENGLISH
B ABSTRACT: Because of the close phylogenetic relationship, nonhuman primates re highly susceptible to human pathogens, including infection of chimpanzees / the human immunodeficiency virus (HIV), the causative agent of AIDS. This, nd the existence of a highly related simian virus, SIV, which causes an IDS-like disease in macaques, emphasizes the continued importance of using onhuman primates as model systems for identifying and developing prophylaxis nd therapy for infectious agents and, in particular, for fighting the pandemic IDS.
N CONTRACT OR GRANT NUMBERS: RR00165
N MEDLINE ACCESSION NUMBER: 89236373

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T TITLE: Phenotypic and functional differences in NK and LAK cells in the eripheral blood of sooty mangabeys and rhesus macaques.
J AUTHOR(S): Powell-JD; McClure-HM; Anderson-D; Fultz-PN; Sell-KW; hmed-Ansari-A
O SOURCE (BIBLIOGRAPHIC CITATION): Cell-Immunol. 1989 Nov; 124(1): 107-18
SSN INTERNATIONAL STANDARD SERIAL NUMBER: 0008-8749

A LANGUAGE OF ARTICLE: ENGLISH
B ABSTRACT: Greater than 75% of the sooty mangabey monkeys at the Yerkes egional Primate Research Center are naturally infected with SIV without any pparent clinical symptomology. On the other hand, experimental infection of hesus macaques with SIV results in a clinical syndrome similar to human AIDS. hese differences with regard to SIV infection prompted us to examine the atural immunosurveillance system of peripheral blood mononuclear cells (PBMC) rom SIV-infected and uninfected monkeys of these two species. Phenotypic and unctional studies of precursor and effector NK and LAK cells in the PBMC from hese two species were carried out using monoclonal reagents, flow icrofluorometry (FMF), and the standard in vitro 51Cr release assay against rototype K562 (NK sensitive) and RAJI (NK resistant, LAK susceptible) target ell lines. Data indicate that both NK and LAK cell activities in the PBMC of ooty mangabeys were significantly (P less than 0.01) greater than those in hesus macaques. The predominant NK effector cells and LAK cell precursors were hown to be Leu 19-CD8+ in the PBMC of sooty mangabeys and Leu19+ CD8- in the BMC of rhesus macaques as determined by panning depletion techniques and FMF nalysis. On the other hand, the predominant LAK effector cells were found to e dual marked Leu 19+ CD8+ in rhesus macaques and Leu 19- CD8+ in sooty angabeys. These qualitative and quantitative differences were not due to SIV nfection of these two species since PBMC from both SIV-seropositive and irus-positive and SIV-sero-negative and virus-negative monkeys gave similar esults. Moreover, of importance is the finding that the functional NK and LAK recursor cells are CD8+ and CD8- in sooty mangabeys and rhesus macaques, espectively. These data may have implications for the natural SIV/SMM irus-positive asymptomatic state of sooty mangabeys and may provide useful ools for tracing the ontogeny and lineage derivation of NK and LAK cells.
N CONTRACT OR GRANT NUMBERS: ROIAI2705701; RR00165
N MEDLINE ACCESSION NUMBER: 90030431

I TITLE: Effects of two different patterns of estradiol replacement on the exual behavior of rhesus monkeys.
U AUTHOR(S): Herndon-JG; Umpierre-DM; Turner-JJ
O SOURCE (BIBLIOGRAPHIC CITATION): Physiol-Behav. 1989 Apr; 45(4): 853-6
SSN INTERNATIONAL STANDARD SERIAL NUMBER: 0031-9384
A LANGUAGE OF ARTICLE: ENGLISH
B ABSTRACT: Seven pairs of rhesus monkeys consisting of adult males and dult, ovariectomized females were tested for sexual behavior. Behavioral tests ere conducted under two patterns of estradiol treatment of the females. Under he "constant estrogen" condition, females were given SC injections of 10 icrograms estradiol benzoate on 28 consecutive days. Under the "cyclic strogen" condition, females were given 28 days of estradiol treatment at arying doses based upon the artificial menstrual cycle devised by Michael, umpe and Bonsall (6). Rates of male mounting, hip-touch (incomplete mounts), nd male threaten-away behavior (redirected aggression) increased during stradiol administration. Mounting peaked at the time of the highest estrogen osage in the cyclic treatment condition, but was highest during the first ortion of the period of constant treatment. Hip-touch and threaten-away ehaviors were more frequent in the constant condition than during cyclic reatment. The high levels of these behaviors during the constant treatment uggest a lack of coordination between male and female motivation which is vercome by providing estradiol stimulation in a pattern which mimics the enstrual cycle.
N CONTRACT OR GRANT NUMBERS: RR00165

N MEDLINE ACCESSION NUMBER: 89387363

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I TITLE: Development of acuity in a primate model of human infantile nilateral aphakia.
U AUTHOR(S): O'Dell-CD; Gammon-JA; Fernandes-A; Wilson-JR; Boothe-RG
O SOURCE (BIBLIOGRAPHIC CITATION): Invest-Ophthalmol-Vis-Sci. 1989 Sep; 0(9): 2068-74
SSN INTERNATIONAL STANDARD SERIAL NUMBER: 0146-0404
A LANGUAGE OF ARTICLE: ENGLISH
B ABSTRACT: We are studying infant rhesus monkeys that have been reared under arious conditions of deprivation to model infantile unilateral aphakia. rating acuity was assessed in these monkeys from birth to approximately 1 year f age using the quick acuity card procedure. We found that an uncorrected phakic eye develops little or no pattern vision. Undercorrection or near point ptical correction of an aphakic eye with an extended-wear contact lens coupled ith continuous occlusion of the opposite eye sometimes results in normal evelopment of acuity in the aphakic eye but does so only at the cost of loss f vision in the occluded eye. Fifty percent partial occlusion coupled with ear-point correction of the aphakic eye results in similar development of cuity for both eyes during the time tested. Monkeys wearing near-point orrection in the aphakic eye and without any occlusion of the other eye show urprisingly good residual acuities in their aphakic eyes. Based on these esults we conclude that aphakic eyes should be treated by providing them with n optical correction, and that occlusion of the opposite eye should be used autiously.
N CONTRACT OR GRANT NUMBERS: RR00165; EY05975
N MEDLINE ACCESSION NUMBER: 89379664

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I TITLE: Synaptic organization of individual neurons in the macaque lateral eniculate nucleus.
J AUTHOR(S): Wilson-JR
O SOURCE (BIBLIOGRAPHIC CITATION): J-Neurosci. 1989 Aug; 9(8): 2931-53
SSN INTERNATIONAL STANDARD SERIAL NUMBER: 0270-6474
A LANGUAGE OF ARTICLE: ENGLISH
B ABSTRACT: Parvocellular and magnocellular neurons in the dorsal lateral eniculate nucleus of macaque monkeys were recorded electrophysiologically and hen injected with HRP. The injected neurons were examined with the electron icroscope. Synaptic terminals contacting the dendrites of individual neurons ere classified and the synapses counted to estimate the number and istribution of each type over the entire dendritic tree. Seven parvocellular nd 2 magnocellular neurons were analyzed. Two of the parvocellular neurons had resynaptic dendrites and no axons. These interneurons had lectro-physiological characteristics much like those of relay neurons with the xception that their receptive field center responses had the opposite sign; .e., they had OFF centers, while most neurons around them had ON centers. All f the relay neurons had similar types and distributions of terminal contacts. owever, the distribution of each synaptic type along the dendrites of an ndividual neuron was not homogeneous. Retinal and F terminals were located redominantly on proximal dendrites whereas RSD terminals, either from the ortex and/or brain stem, predominated on the intermediate and distal endrites. Parvocellular neurons were estimated to have about 500 total ynapses on their dendritic trees, while magnocellular neurons had about 3000 otal synapses on their dendritic trees. The retinal terminals making synaptic

ontacts with magnocellular neurons were also presynaptic to terminals ontaining flattened vesicles; these latter terminals also had synapses onto he magnocellular neuron's dendrites. Such a synaptic arrangement is called a riadic arrangement, or triad. Parvocellular neurons rarely had such triadic rrangements. In comparing these data with those of the cat, it was concluded hat the major synaptic difference between relay cell types in both species Class 1/Class 2 cells for the cat and parvo/magno cells for the monkey) was he frequent occurrence of triads for Class 2 cells and magnocellular cells ersus the infrequent occurrence of triads for Class 1 cells and parvocellular ells. Although these triadic arrangements have been studied for over 2 ecades, their function has yet to be determined, but probably relates to nhibition of retina signals at dendrites of magnocellular neurons in the onkey and Class 2 cells in the cat.
N CONTRACT OR GRANT NUMBERS: EY04976; RR00165
N MEDLINE ACCESSION NUMBER: 89361660

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I TITLE: Effects of age and sex on bone density in the rhesus monkey.
U AUTHOR(S): Pope-NS; Gould-KG; Anderson-DC; Mann-DR
O SOURCE (BIBLIOGRAPHIC CITATION): Bone. 1989; 10(2): 109-12
SSN INTERNATIONAL STANDARD SERIAL NUMBER: 8756-3282
A LANGUAGE OF ARTICLE: ENGLISH
B ABSTRACT: Normative data for bone density of cortical and trabecular bone n the rhesus monkeys is described in the present study. Changes of bone ensity (g/cm2) for the humerus, the third lumbar vertebra, and the eighth audal vertebra of the rhesus monkey show differences due to age and sex of the ubjects (males n = 57; females n = 49). In general, bone density increased ith age and then reached a plateau at approximately 3 to 4 years in all bones easured. In the humerus, older females (greater than 30 years) had a ignificantly lower bone density than females of 4 to 24 years, while bone ensity in older males did not decrease. In the vertebrae, some evidence of dvanced age-related decreases in bone density was found in both sexes. These esults indicate that the rhesus monkey shows a natural pattern of change in one mineralization which parallels that seen in humans. The physiological imilarity between the rhesus monkey and human further suggests a potential ole for this species in the future investigation of osteoporosis.
N CONTRACT OR GRANT NUMBERS: RR00165; HD23295
N MEDLINE ACCESSION NUMBER: 89352129

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I TITLE: Short-day melatonin pattern advances puberty in seasonally breeding hesus monkeys (Macaca mulatta).
U AUTHOR(S): Wilson-ME; Gordon-TP
O SOURCE (BIBLIOGRAPHIC CITATION): J-Reprod-Fertil. 1989 Jul; 86(2): 435-44
SSN INTERNATIONAL STANDARD SERIAL NUMBER: 0022-4251
A LANGUAGE OF ARTICLE: ENGLISH
B ABSTRACT: Prepubertal, spring-born females (Group H: N = 5) living outdoors ere given a daily injection of melatonin (0.70 microgram/kg, s.c.) late in the fternoon to produce a short-day melatonin pattern equivalent to a night of pproximately 14 h. The dose of melatonin produced serum concentrations of elatonin which simply extended, within the 24 h day, the normal endogenous ighttime elevation (80-100 pg/ml). The study was started in March when the emales were 23 months of age and continued through January. Parameters of exual maturation for this group were compared to those of untreated, ge-matched females (Group C: N = 5) which also lived outdoors under changing

environmental conditions. Melatonin treatment significantly advanced age at first perineal swelling (23.9 +/- 0.5 vs 30.5 +/- 0.2 months) and menarche 26.2 +/- 0.9 vs 31.2 +/- 2.4 months). Since all of the females were spring-born, these events occurred earlier in the year in Group H females (swelling: April vs October; menarche: June vs November). Furthermore, 4/5 Group H females exhibited first ovulation in December at 31.8 +/- 0.3 months. None of the Group C females ovulated during their 2nd year, but all did so th next breeding season at 43.5 +/- 0.3 months. All first ovulations in females had luteal-phase progesterone concentrations elevated for at least 12 days wi peaks greater than 3.0 ng/ml. Body weights were similar between groups until the post-menarchial interval when weight gain was greater in the melatonin-treated females. A similar pattern of group differences also was observed for serum concentrations of growth hormone and somatomedin-C. In addition, prolactin concentrations were seasonally elevated during the summer months in both groups, but concentrations fell to nadir values by August in Group H females and remained elevated until October in Group C animals. These results suggest that, in adolescent females housed outdoors, exposure to a short-day melatonin pattern permits sexual maturation to be initiated at an earlier age, allowing first ovulation to occur in the months immediately after menarche. A long-day melatonin pattern, typically experienced by females at this developmental age, may actually delay the initiation of maturational events until the subsequent fall months.

CN CONTRACT OR GRANT NUMBERS: HD16305; RR00165
AN MEDLINE ACCESSION NUMBER: 89342328

TI TITLE: Nocturnal changes in serum melatonin during female puberty in rhesus monkeys: a longitudinal study.

AU AUTHOR(S): Wilson-ME; Gordon-TP

SO SOURCE (BIBLIOGRAPHIC CITATION): J-Endocrinol. 1989 Jun; 121(3): 553-62
ISSN INTERNATIONAL STANDARD SERIAL NUMBER: 0022-0795
LA LANGUAGE OF ARTICLE: ENGLISH

AB ABSTRACT: Diurnal concentrations of serum melatonin were determined longitudinally in female rhesus monkeys throughout sexual maturation to ascertain how levels varied with advancing age and reproductive onset. Females were housed either in outdoor enclosures (n = 8) exposed to ambient environmental conditions, or indoors (n = 4) under a photoperiod of 12 h light: 12 h darkness and fixed temperature of 20-23 degrees C. Animals were studied from immaturity (15 months) through first ovulation and were additionally compared with fully adult female rhesus monkeys (n = 5) studied during the annual breeding season. The diurnal melatonin pattern was described for the developing females in the summer, autumn and winter in 3 successive years from samples collected at 10.00, 18.00, 22.00, 02.00, 06.00 and 10.00 h. Nocturnal levels of melatonin declined significantly during development in both indoor- and outdoor-housed females with a progressive decrease up to 33 months of age. Daytime values were consistently low but exhibited a slight decline also with age. Nocturnal values in all months sampled fell significantly with greater decreases occurring at the earliest ages. Furthermore, superimposed upon this developmental change, animals housed outdoors responded to seasonal changes in photoperiod with diurnal increases in melatonin occurring after sunset. The females in the present study exhibited first ovulation at two distinct ages: 32-37 months ('early', n = 6) and 41-45 months ('later', n = 5). One female did not ovulate within the study period. Although nocturnal levels of serum melatonin were similar between the two groups up to 29 months of age, a post-hoc analysis revealed that concentrations were significantly lower by 34

nths of age for the early group, a time coincident with first ovulation. octurnal levels of melatonin remained high, relative to the early group, in e later ovulating females until 43 months of age, coincident with first ulation for these animals. The diurnal pattern of serum melatonin at first ulation, regardless of chronological age, was similar to that observed during e ovulatory season for adult female rhesus monkeys. These data suggest that octurnal melatonin concentrations decline with advancing chronological age in epubertal female rhesus monkeys.(ABSTRACT TRUNCATED AT 400 WORDS)
N CONTRACT OR GRANT NUMBERS: HD16305; RR00165
N MEDLINE ACCESSION NUMBER: 89328289

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I TITLE: Conditions required for detection of specimen-specific SE-I econdary electrons in an analytical SEM.
J AUTHOR(S): Apkarian-RP
) SOURCE (BIBLIOGRAPHIC CITATION): J-Microsc. 1989 May; 154 (Pt 2): 177-88
SSN INTERNATIONAL STANDARD SERIAL NUMBER: 0022-2720
A LANGUAGE OF ARTICLE: ENGLISH
B ABSTRACT: An analytical SEM equipped with an above-the-lens detector, an n-the-lens specimen stage and a high brightness LaB6 emitter was used to roduce a specimen-specific, secondary electron-I (SE-I) signal for recording dge brightness contrast with high intensity on small particles at high agnification (200,000). The SE-I edge brightness contrast produced from 20-40 m colloidal gold on silicon wafers was useful for estimating instrument esolution since the edge brightness is the sum of the SE-I signal range approximately equal to 1 nm) and the beam diameter. LaB6 crystal saturation nd gun conditions were determined in order to minimize the probe diameter at he first cross-over position. Ferritin particles also on the silicon wafers ere imaged by adjustments of the gun bias voltage conditions. Establishment of hese conditions was useful for high resolution SEM studies of appropriately pated bulk biological specimens.
I CONTRACT OR GRANT NUMBERS: RR00165; ES03791
I MEDLINE ACCESSION NUMBER: 89311414

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I TITLE: Measurement of binocular alignment in normal monkeys and in monkeys ith strabismus.
J AUTHOR(S): Quick-MW; Boothe-RG
) SOURCE (BIBLIOGRAPHIC CITATION): Invest-Ophthalmol-Vis-Sci. 1989 Jun;)(6): 1159-68
SSN INTERNATIONAL STANDARD SERIAL NUMBER: 0146-0404
A LANGUAGE OF ARTICLE: ENGLISH
B ABSTRACT: Accurate assessment of ocular alignment in monkeys is difficult ecause typical clinical methods require extensive cooperation by the subject provide only a rough estimate of the misalignment. Recently, Brodie derived geometrical model for determining the Hirschberg ratio in humans, and alidated it photographically. In this study, we have applied these procedures n order to determine corresponding values for monkeys. We have found the verage Hirschberg ratio for macaques to be approximately 14 degrees of otation per millimeter corneal light reflex displacement. We extended the odel to binocular viewing conditions, which allows for a description of the isual axes in Cartesian coordinates in relation to the head. Fixation errors, omputed in terms of lateral and axial error vectors from intended fixation argets, were then determined for one normal monkey and for three monkeys that ave a naturally occurring strabismus. Assessment of the fixation errors was

ade at several different distances and angles in the horizontal plane. The tandard deviation for our measurements averaged 2.1 degrees. Our data indicate hat measurements must be made at multiple locations throughout the visual ield in order to accurately specify the pattern of misalignment. Finally, a rocedure is demonstrated which specifies the misalignment in terms of a yclopian eye, which is independent of the interocular separation.
N CONTRACT OR GRANT NUMBERS: EY06436; RR00165
N MEDLINE ACCESSION NUMBER: 89277674

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I TITLE: Selective elimination of cross-compartmental innervation in rat ateral gastrocnemius muscle.
U AUTHOR(S): Donahue-SP; English-AW
O SOURCE (BIBLIOGRAPHIC CITATION): J-Neurosci. 1989 May; 9(5): 1621-7
SSN INTERNATIONAL STANDARD SERIAL NUMBER: 0270-6474
A LANGUAGE OF ARTICLE: ENGLISH
B ABSTRACT: The calf muscles of the rat hindlimb are composed of smaller ntities, called neuromuscular compartments, which are the territories of uscle innervated by a single, naturally occurring primary (first-order) muscle erve branch. While it is quite clear that a precise connectivity exists very arly in development between motoneuron pools and individual muscles, the echanisms responsible for producing the adult pattern of compartmental nnervation are unknown. This study uses intracellular recording techniques to emonstrate that neuromuscular compartments are essentially established at irth and that postnatal synapse elimination has little role in establishing euromuscular compartments. Our results demonstrate the existence of a small umber of cross-compartmental connections in neonates which are not present in dults. Examining the removal of these cross-compartmental connections in both ormal muscles and in muscles that have had synapse elimination delayed by enotomy reveals that the synapses responsible for this innervation are liminated in a selective manner.
N CONTRACT OR GRANT NUMBERS: NS20545; RR00165
N MEDLINE ACCESSION NUMBER: 89257611

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I TITLE: Early abnormal visual experience induces strabismus in infant onkeys.
U AUTHOR(S): Quick-MW; Tigges-M; Gammon-JA; Boothe-RG
O SOURCE (BIBLIOGRAPHIC CITATION): Invest-Ophthalmol-Vis-Sci. 1989 May; 0(5): 1012-7
SSN INTERNATIONAL STANDARD SERIAL NUMBER: 0146-0404
A LANGUAGE OF ARTICLE: ENGLISH
B ABSTRACT: We measured ocular alignment in the horizontal direction for 17 onkeys reared under deprivation paradigms that involved monocular defocus, onocular occlusion and optically corrected aphakia coupled with continuous or artial occlusion of the fellow eye. Alignment was measured at 3 and 7 months ith a photographic corneal light reflex method. Results showed that a majority f the monkeys in each paradigm developed strabismus following deprivation earing, the common factor being early abnormal visual experience. Results also ndicated a trend in which many of the deviations seen at 3 months of age were xotropic while all of the animals with deviations at 7 months of age were sotropic. These results on deprivation-induced strabismus, which are the first eported in monkeys, are consistent with previous findings in cats and humans, roviding further evidence that deprivation affects not only sensory, but motor ystems as well. These findings provide evidence that infant monkeys are a good

odel for studies of the possible relationships between amblyopia and trabismus that are often noted in children with early visual deprivation. urthermore, it raises the prospect that some of the findings in previous nimal studies that have been attributed to the direct effects of deprivation ay actually be secondary to the induced misalignment.
N CONTRACT OR GRANT NUMBERS: EY05975; EY06001; RR00165
N MEDLINE ACCESSION NUMBER: 89254352

16 of 18

I TITLE: HIV infection of chimpanzees as a model for testing hemotherapeutics.
U AUTHOR(S): Fultz-PN; McClure-HM; Swenson-RB; Anderson-DC
O SOURCE (BIBLIOGRAPHIC CITATION): Intervirology. 1989; 30 Suppl 1: 51-8
SSN INTERNATIONAL STANDARD SERIAL NUMBER: 0300-5526
A LANGUAGE OF ARTICLE: ENGLISH
B ABSTRACT: Following inoculation of chimpanzees, the human immunodeficiency irus (HIV) establishes a long-term persistent infection characterized by eroconversion and the presence in peripheral blood cells of recoverable virus hich can be quantitated. Because most HIV-infected chimpanzees have developed o signs of clinical diseases or hematologic abnormalities, their virologic, erologic and other immune responses can be compared with those of asymptomatic IV-infected persons. This analysis might lead to the identification of factors mportant in preventing the development of disease. There are now approximately 00 HIV-infected chimpanzees in the United States, and many of these animals ould be made available for testing chemotherapeutic agents for the ability to lter virus load or to enhance immune responses.
N CONTRACT OR GRANT NUMBERS: RR00165; 200830626
N MEDLINE ACCESSION NUMBER: 89213287

17 of 18

I TITLE: Season determines timing of first ovulation in rhesus monkeys Macaca mulatta) housed outdoors.
U AUTHOR(S): Wilson-ME; Gordon-TP
O SOURCE (BIBLIOGRAPHIC CITATION): J-Reprod-Fertil. 1989 Mar; 85(2): 583-91
SSN INTERNATIONAL STANDARD SERIAL NUMBER: 0022-4251
A LANGUAGE OF ARTICLE: ENGLISH
B ABSTRACT: In order to determine the relative importance of age and season n the occurrence of first ovulation in rhesus monkeys, the timing of puberty n spring-born females (Group S, N = 13) was compared to that of fall (N = 3) nd winter-born (N = 5) females (Group W). All females were housed outdoors and ere studied from 12 months of age through first ovulation. Menarche occurred t a similar age but significantly earlier in the year for Group W (31.2 +/- .7 months; 25 August +/- 19.5 days) than for Group S females (31.2 +/- 0.7 onths; 14 November +/- 17.1 days). First ovulation, as assessed from twice eekly serum progesterone determinations, occurred exclusively in the fall or inter in a bimodal age distribution for all females. For Group W females, 6/8 vulated during the 3rd year at 35.8 +/- 0.7 months while 2/8 ovulated during he 4th year at 45.3 +/- 0.1 months. In contrast, only 3/13 Group S females vulated during the 3rd year and at a significantly younger age of 31.4 +/- 0.4 onths compared to Group W. The remaining Group S females (10/13) ovulated the ollowing autumn at 43.2 +/- 0.2 months, significantly younger than the later vulating Group W females. In addition to this pattern of first ovulation, erum concentrations of prolactin varied seasonally, rather than with age, in oth groups of females with higher levels in the summer and low levels in the inter.(ABSTRACT TRUNCATED AT 250 WORDS)

ULRY 0420 SECONDARY DOGS OR CATS OR PRIMATES RESEARCH AT EMORY OR TULANE U

PROJECT NUMBER.....5 R01 MH19506-19 FY 94

RG/INTRAMURAL UNIT..BNR

INVESTIGATOR NAME/ADDRESS
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ERFORMING ORGANIZATION: EMORY UNIVERSITY
ITLE HORMONES, BRAIN, AND BEHAVIOR

BSTRACT:

This application for MH 19506-18 is to continue our program of Psychobiological research in the Department of Psychiatry, Emory University School of Medicine. The School of Medicine wishes to support a comprehensive research program that is basic t the problems of brain function, behavior and mental health. The aim is to investigate the physiological and neuroendocrine bases of patterns of primate behavior. Major emphasis is given to the affectional and sexual responses and to the agonistic and aggressive responses. Three interrelated studies are proposed in a social primate, the cynomolgus monkey.

Experiment I will use well-established behavioral techniques systematically to examine, for the first time in a male primate, how aromatizable and non-aromatizable androgens affect different types of male aggression. It will also investigate the social factors that elicit male aggression and how they influence the social bonding of the male-female pair. Experiment II will continue our studies on the behavioral effects in primates of medroxyprogesterone acetate (MPA), which is used clinically to treat violent aggression, particularly violence by men towards women. To understand the brain mechanisms involved, we will use high performance liquid chromatography, autoradiography and immunohistochemistry to study the uptake of androgens and progestins by the male primate brain, and to map the location of androgen- and progestin-target neurons and receptors. Experiment III is concerned with the metabolism of testosterone by brain; and specifically the role of its aromatization to estradiol in the male primate. Aromatization is important for sexual behavior in the male rat, and our preliminary findings with the aromatase inhibitor, Fadrozole, have indicated that this is also the case for the primate, an observation which has importance because of the clinical use of aromatase inhibitors in prostatic disease and cancer. We plan to develop these comparative behavioral and biochemical studies in male monkeys and to extend them to females.

CRISP INDEXING TERMS FROM CRISP THESAURUS:

x 4000 0240 S Macaca fascicularis

* INDICATES TERM USED FOR SEARCH
P,S,T = PRIMARY, SECONDARY, TERTIARY EMPHASIS RESPECTIVELY
$ = TOTAL AWARD AMTS & NOT LIMITED TO PORTION OF PROJECT RELATED TO SUBJECT OF SEARCH
SOURCE: CRISP FORMAT Z FY 94 LAST UPDATE 02-09-95

PROJECT NUMBER.....5 K05 DA00008-20 FY 94

RG/INTRAMURAL UNIT..SRCD

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ERFORMING ORGANIZATION: EMORY UNIVERSITY
ITLE BEHAVIORAL PHARMACOLOGY OF OPIOIDS AND CAFFEINE

BSTRACT:

A program of research is proposed for studying behavioral effects of two types of drugs of major clinical, social , and theoretical important: 1) opioids, which have long represented a significant abuse problem; 2) caffeine, which is the most widely consumed behaviorally-active compound in the world, and which has many of the characteristics of a drug of abuse.

The basic strategy of this research program is to use behavioral methodologies to study interactions of drugs with their neuronal substrates. The objective is to identify and characterize components of drug action that may be relevant to potential for abuse and to related phenomena, such as tolerance and physical dependence. The neuronal substrates of drug action will be characterized with receptor-selective agonists, antagonists, and tolerance and cross-tolerance. Representative compounds will be studied over a range of doses in several behavioral procedures, such as drug discrimination, food-reinforced operant responding, locomotor activity, and autotitration of reinforcement threshold for electrical brain stimulation. Experiments will be performed on rats and, often, on squirrel monkeys. This approach will help in assessing the generality of experimental findings with respect to pharmacological, behavioral, and species variables.

The proposed experiments will address a number of hypotheses. Among these are: 1) Endogenous opioid peptides can modulate the behavioral effects of exogenously administered opioid drugs; 2) Similar components of drug action mediate discriminative stimulus, reinforcing stimulus, and subjective drug effects; 3) The discriminative stimulus effects of low and high doses of caffeine differ qualitatively from each other and reflect components of drug action that underlie, respectively, positive and negative mood states in humans.

RISP INDEXING TERMS FROM CRISP THESAURUS:

* 0182 1640 T Salmiri

* INDICATES TERM USED FOR SEARCH
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SOURCE: CRISP FORMAT Z FY 94 LAST UPDATE 02-09-95

PROJECT NUMBER.....5 R37 DA00541-21 FY 94

IRG/INTRAMURAL UNIT..NSS

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PERFORMING ORGANIZATION: EMORY UNIVERSITY
TITLE BEHAVIORAL PHARMACOLOGY OF NARCOTIC ANTAGONISTS

ABSTRACT:

Opioids comprise a diverse group of compounds that display a broad array of agonist and antagonist properties, apparently as a consequence of differential interactions with multiple populations or receptors. There are major differences in behavioral pharmacology among opioids drugs, which often correspond to differences in abuse potential. This research program will evaluate systematically the behavioral effects of representative opioid drugs having differing spectra of activity in order to identify and study distinct components of drug action that reflect the various receptor types with whch the drugs interact, and which are fundamental determinants of the differences in abuse potential. Particular attention will be given to characterizing the behavioral effects of opioid peptides that interact with defined receptor populations, and to clarifying the role of endogenous opioid systems in the diverseness of the behavioral effects of opioid drugs. Many of the proposed experiments will address different aspects of two hypotheses: 1) activation of delta-opioid receptors can potentiate behavioral effects mediated by mu receptors; 2) mu-receptor agonists (eg, morphine) do not induce tolerance to delta-mediated opioid actions. Behavioral effects of opioid peptides will be determined and compared to those of prototypic opioid alkaloids, and interactions between opioid peptides and opioid agonists and antagonists will be studied. Drugs usually will be examined in two animal species, rat and squirrel monkey, and in several behavioral procedures to generate converging experimental findings having broad applicability. Principal experiments will include: a) evaluating morphine-like and nonmorphine-like discriminative stimulus efects of opioids; b) determining if opioid peptides modify effects of opioid drugs on locomotor activity and food-reinforced operant responding in the same way that they modify discriminative effects, and conversely, determining if behavioral effects of opioid peptides are modified differentially by chronic morphine administration; c) determining if stress-induced potentiation of opioid analgesia can serve as a mdel of "natural" interactions between endogenous opioid systems and opioid drugs; d) characterizing pharmacologically single-dose sensitization by agonists to antagonist-induced disruption of food-maintained operant

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PROJECT NUMBER.....5 R01 DA01161-19

FY 94

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PERFORMING ORGANIZATION: EMORY UNIVERSITY

TITLE BEHAVIORAL AND PHYSIOLOGICAL CONCOMITANTS OF DRUG ABUSE

ABSTRACT:

The purpose of the proposed studies is to identify and characterize the effects of cocaine and related drugs on learned behavior and on physiological activity in nonhuman primates. The experiments are based on the outcome of previous studies in this laboratory showing that cocaine and other drugs with high abuse liability have pronounced effects on behavior, and that behaviorally effective doses of the same drugs can also affect the cardiovascular and thermoregulatory systems. Experiments will be conducted in squirrel monkeys surgically prepared under sterile conditions with chronically indwelling arterial and venous catheters and, in some instances, with osmotic minipumps. Experiments will involve the direct measurements of systemic arterial blood pressure and heart rate as indices of cardiovascular activity, the direct measurement of colonic temperature as an index of thermoregulatory activity, and operantly conditioned behavior as a measure of central nervous system activity. A wide range of doses of selected drugs will be administered alone to determine the direction, magnitude and of rest, and on behavioral and physiological activity during periods of ongoing schedule-controlled behavior. Drugs of primary interest are those that can have central nervous system stimulant effects and include cocaine, d-amphetamine, caffeine, methylphenidate and phencyclidine. In addition, selected pharmacological agonists, antagonists and drugs that alter catecholamine or serotonin synthesis and uptake or receptor activity will be administered in combination with cocaine and other drugs to study the pharmacological basis of the drug effects. Serum blood levels of drugs will be assayed using HPLC to describe the pharmacokinetics of the drugs under study and to correlate these findings with the behavioral and physiological effects. The overall objective of the research program is to determine (1) the effects selected abused drugs with stimulant properties can have on the central nervous system by studying the effects of the drugs on conditioned behavior in squirrel monkeys, (2) the effects these drugs can have on heart rate, blood pressure and temperature at doses that have effects on behavior mediated via the central nervous system, and (3) whether the behavioral, cardiovascular or thermoregulatory effects can be enhanced, attenuated or blocked by other drugs and chemical substances or by behavioral procedures.

CRISP INDEXING TERMS FROM CRISP THESAURUS:

* 0182 1640 T Salmiri

* INDICATES TERM USED FOR SEARCH
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SOURCE: CRISP FORMAT Z FY 94 LAST UPDATE 02-09-95

PROJECT NUMBER.....2 R01 DA05346-06

FY 94

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IRG/INTRAMURAL UNIT..SRCD

PERFORMING ORGANIZATION: EMORY UNIVERSITY

TITLE BEHAVIORAL AND RESPIRATORY EFFECTS OF XANTHINES

ABSTRACT:

Caffeine and related xanthines are behaviorally-active drugs used clinically as respiratory stimulants, but biochemical mechanisms that mediate the behavioral and respiratory effects remain undefined. Studies have implicated both antagonism of adenosine receptors and inhibition of phosphodiesterase activity as possible mechanisms that mediate their central effects. Because of the widespread use of xanthines as therapeutic drugs and as constituents of food and beverages, studies are proposed to (1) investigate mechanisms that mediate the behavioral and respiratory-stimulant effects of xanthines, (2) establish a nonhuman primate model of caffeine tolerance, (3) characterize the interactions of caffeine and nicotine during acute and chronic administration of both drugs, and (4) compare the effects of caffeine to those of cocaine to assess the pharmacological specificity of drug effects and to provide critical information regarding the behavioral and respiratory effects of cocaine. Ventilation (minute volume, tidal volume and respiratory frequency) in unanesthetized rhesus monkeys will be monitored continuously with a pressure-displacement, head plethysmograph while a medical gas analyzer monitors carbon dioxide and oxygen tensions in expired air. Drug effects on ventilation will be determined during exposure to normal atmospheric conditions and during conditions of hypercapnia, hypoxia and hyperoxia. Operant behavior will be studied while ventilation is being monitored to provide direct comparisons of drug effects on behavior and on respiration. Additionally, the pharmacokinetics of caffeine and cocaine will be determined by high-performance liquid chromatography analysis. A wide range of doses of caffeine and related drugs with selective actions as adenosine-receptor agonists and antagonists and as phosphodiesterase inhibitors will be determined in caffeine-tolerant and non-tolerant animals. Altered pharmacokinetics and sensitivity to caffeine and related stimulants during chronic drug administration, in conjunction with acute drug interactions, will have important implications for the study of drug abuse and for the establishment of appropriate drug-abuse policy.

CRISP INDEXING TERMS FROM CRISP THESAURUS:

* 0182 1666 T Macaca mulatta

* INDICATES TERM USED FOR SEARCH
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SOURCE: CRISP FORMAT Z FY 94 LAST UPDATE 02-09-95

PROJECT NUMBER.....2 R01 DA06264-04
FY 94
XG/INTRAMURAL UNIT..SRCD

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RFORMING ORGANIZATION: EMORY UNIVERSITY
ITLE CHRONIC COCAINE EXPOSURE DURING GESTATION

BSTRACT:

Clinical reports have indicated that a pregnant woman and her fetus may be subjected to a host of potential problems due to cocaine use. Few studies have examined under controlled laboratory conditions the consequences of cocaine use during pregnancy and, therefore, the effects of cocaine on maternal, fetal and neonatal development and behavior have been poorly documented. This proposal represents plans to continue studies in rhesus monkeys to assess the postnatal consequences of chronic cocaine exposure during gestation. Behavioral, pharmacological and physiological experiments will be performed in young rhesus monkeys previously exposed to cocaine in utero in order to characterize the consequences of prenatal exposure. In addition to defining physical growth characteristics (e.g. body weight, crown-rump length, biparietal diameter, etc.) for cocaine-exposed and pair-fed control subjects, experiments will also be performed to assess the neurobehavioral competence of the monkeys and their responsiveness to cocaine. Three well-established behavioral protocols will be used (delayed matching-to-sample, repeated acquisition and drug self-administration) to test for differences in complex operant performance between drug-exposed and pair-fed control subjects as a function of the gestational age of prenatal exposure and the duration of prenatal exposure. A second set of experiments will be conducted to determine the pharmacokinetic profile of cocaine metabolism in young monkeys previously exposed prenatally to cocaine using HPLC analysis. Finally, prenatally-exposed monkeys will be tested for the effects of cocaine on respiratory function using an established head-plethysmographic technique. For most of these experiments, a full range of doses of cocaine will be studied alone and in combination with other drugs having selective agonist and antagonist actions at various receptors (e.g. dopaminergic, serotonergic, adrenergic, etc.) to determine differences in drug sensitivity among the young monkeys. The prenatally-exposed monkeys will also be monitored and tested for onset of puberty as a measure of the impact of prenatal exposure on the development, maturation and function of the endocrine system (i.e. hypothalamic-pituitary-gonadal axis) controlling reproductive competence. The research will contribute to knowledge of the effects of exposure to cocaine in utero and to the characterization of the rhesus monkey as a model for studying the risks of cocaine use during pregnancy in humans.

ISP INDEXING TERMS FROM CRISP THESAURUS:

0182 1666 T Macaca mulatta

INDICATES TERM USED FOR SEARCH
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URCE: CRISP FORMAT Z FY 94 LAST UPDATE 02-09-95

ROJECT NUMBER.....5 K02 MH01062-02
/INTRAMURAL UNIT.,PYB

FY 94

INVESTIGATOR NAME/ADDRESS
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RFORMING ORGANIZATION: EMORY UNIVERSITY
LE BEHAVIORAL DEVELOPMENT--PRENATAL HORMONAL INFLUENCES

STRACT:

This is a request for an ADAMHA RSDA Level II award. The research investigates gender development in group-living male and female rhesus monkeys exposed to atypical levels of prenatal androgen. These studies will elucidate the role that prenatal androgens play in regulating genital and psychological differentiation in a primate, under social conditions that produce a full range of gender-related social and sexual behavior. By employing short-term treatments during early and late gestation the project seeks to separate the effects of prenatal androgen on masculinization of the genitalia from its effects upon masculinization and defeminization of behavior. These studies are relevant to issues of human gender differentiations and discordances between genital sex and gender role behavior, a clinical problem that affects a substantial number of humans. To achieve these goals, time-mated pregnant rhesus females, living in large age-graded heterosexual groups, will have the sex of their fetus identified using sex chromatin staining. Mothers of female fetuses will be injected with testosterone enanthate (TE) or vehicle for 35 days starting on gestational day 40 or 110. Mothers of male fetuses will be injected with a Nal-Lys GnRH antagonist (Antide), Antide plus TE, or vehicle starting at the same times and for the same duration as the female treatments. Prenatal Antide will suppress testicular function creating males who are androgen deficient for a brief period early or late in gestation. The times selected represent periods during or after genital masculinization and when previous work has shown androgens to differentially affect the sexually dimorphic patterns of rough play and juvenile mounting. Experimental and control animals will be observed behaviorally from birth through the transition into adulthood using methodology that captures traditional sexually dimorphic patterns of behavior and additional patterns of social behavior that are only observable when infants can interact with all ages and sexes in an unrestricted manner. Endocrine and skeletal development will be tracked with systematic collection of serum samples to measure neonatal and peripubertal patterns of hormone secretion and morphometric measures of skeletal growth. Pituitary function will be challenged with exogenous GnRH at several times during development to assess the effects of early androgen exposure on the integrity of the hypothalamo-pituitary-gonadal axis. After the pubertal transition, male and female sexual behavior will be investigated in response to their endogenous hormones. If experimental females produce offspring, the relationship between early androgen

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ROJECT NUMBER.....5 K02 MH01062-02 (Continued)

exposure and maternal behavior will be investigated. These studies provide the first experimental manipulation of prenatal androgen in male primates and will substantially extend our understanding of the role androgen plays in gender differentiation in primates. RSDA support will free the PI from teaching and administrative duties and allow the development of new behavioral and diagnostic techniques for assessing the effects of prenatal androgen manipulations.

ISP INDEXING TERMS FROM CRISP THESAURUS:

* 0182 1666 T Macaca mulatta

* INDICATES TERM USED FOR SEARCH
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URCE: CRISP FORMAT Z FY 94 LAST UPDATE 02-09-95

PROJECT NUMBER.....5 R01 NS17678-14 FY 94

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IRG/INTRAMURAL UNIT..NEUB

PERFORMING ORGANIZATION: EMORY UNIVERSITY

TITLE MOTOR AND COMPLEX FUNCTIONS OF BASAL GANGLIA AND CORTEX

ABSTRACT:

The principal issues addressed in this proposal are: 1) whether motor processing within the basal ganglia-thalamocortical `motor circuit' is organized, at the neuronal level, in a predominantly serial or parallel fashion; and 2) whether there are systematic transformations, at successive stages of the circuit, in the neural representations of variables that have been implicated in different functional `levels' of motor processing. The proposed studies are designed to determine a) whether the same categories of information (i.e., the same motor variables) are proposed at different stages (cortical, striatal, pallidal, thalamic) of the `motor circuit'; b) whether there are systematic changes in the proportionate representation of a given motor variable by neurons at successive stages of the circuit; and c) whether there are systematic shifts, at successive stages of the circuit, in the regression slopes relating variable-specific changes in neuronal discharge rates to gradations in the represented variables. The Specific Aims for the project are as follows: [1] To determine whether, during the planning and execution of visually guided limb movements, multiple `levels' of motor processing are represented in parallel by neuronal activity within each of the precentral motor fields that contribute to the `motor circuit'. The activity of individual neurons in SMA, MC and APA will be recorded in monkeys performing tasks that require them to make reaching movements to position a cursor in two-dimensional space. The tasks involve both the preparation and execution `modes' of motor processing, and will also dissociate variables relevant to different `levels' of processing viz, target level variables, trajectory/kinematic variables, and dynamic/muscle-related variables. Data from the three areas will then be compared, based on results of both categorical and regression analyses. [2] To determine whether, during the planning and execution of visually guided limb movements, multiple `levels' of motor processing are represented in parallel by neuronal activity at the striatal stage of the `motor circuit'. Task-related single unit activity will be sampled from the arm region of the putamen in monkeys performing the same tasks employed in Specific Aim 1. After being subjected to the same set of analyses, the data will be compared with those obtained in Specific Aim 1. [3] To determine whether, during the planning and execution of visually guided limb movements, multiple `levels' of motor processing are represented in parallel by neuronal activity at the pallidal stage of the `motor circuit'. Task-related single unit activity will be sampled from the arm region of GPi in monkeys performing the same tasks used in Specific Aims 1 and 2.

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OJECT NUMBER.....2 R01 NS20855-11A1
INTRAMURAL UNIT..ORTH

FY 94

INVESTIGATOR NAME/ADDRESS
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FORMING ORGANIZATION: EMORY UNIVERSITY
E SPINAL MECHANISMS REGULATING MUSCLE AND LIMB MECHANICS

TRACT:

The goal of this research program is to understand how the circuits of the spinal cord contribute to coordinated actions of the musculoskeletal system. One way to make sense of spinal circuitry is to evaluate the component reflexes in terms of the mechanical actions, lengths and forces of the associated muscles. For example, the functions of reciprocal inhibition can best be appreciated by knowing that the linked muscles are mutually antagonistic and that the strength of the inhibition depends on muscle length. In general, proprioceptive feedback derives from a number of different receptors and converges and diverges extensively in the spinal cord. A major reason why the functions of these pathways are poorly understood is that information on the three-dimensional actions of muscles and neuromuscular compartments is lacking. Each muscle or compartment acts in a unique direction across one or more joints, and each is associated with a unique pattern of intermuscular reflexes.

The purpose of this research is to establish, for the cat hindlimb, how the organization of spinal reflexes corresponds to the mechanical actions and natural activity patterns of the associated muscles. Mechanical actions will be determined by measuring the torque exerted by a number of muscles about the ankle, knee and hip. Transmission of forces through complex or distributed tendons will be measured by implanted transducers. Reflex linkages between muscles will be investigated in decerebrate cats by applying selective length inputs to one muscle or compartment and recording the force response in the other at different forces and lengths and states of activation. The resulting torque profiles and reflex maps, along with dynamic properties of the limb, will provide basic data for the formulation of models which can explain how the action of spinal circuits contributes to coordinated limb movement and why reflex organization is modified for certain motor tasks, such as locomotion and turning.

The global picture of reflex organization resulting from these studies can potentially guide the formulation of analytical models of information processing in the spinal cord as well as provide a basis for new approaches to the rehabilitation of injury to the motor system. The study of force transmission in tendons may suggest improvements in tendon transfer surgery.

SP INDEXING TERMS FROM CRISP THESAURUS:

0182 1435 T cat

INDICATES TERM USED FOR SEARCH
I = PRIMARY, SECONDARY, TERTIARY EMPHASIS RESPECTIVELY
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URCE: CRISP FORMAT Z FY 94 LAST UPDATE 02-09-95

PROJECT NUMBER.....7 R01 NS21023-10

FY 94

RG/INTRAMURAL UNIT..NEUA

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RFORMING ORGANIZATION: EMORY UNIVERSITY
ITLE FUNCTION AND MODIFIABILITY OF SINGLE MOTONEURON POOLS

BSTRACT:

The long term objective of this study is to identify and characterize different mechanisms used by the nervous system to recruit and modulate the activity of motoneurons during different behaviors. The specific aims are to contrast the recruitment schemes used to control a single muscle when it is excited by diverse sources, and to determine possible functional correlates of those schemes. The results of this work will help to resolve debate about the generality and utility of different recruitment schemes, and may lead to new understanding of the bases of movement disorders, such as spasticity, that involve abnormalities of recruitment or sensory processing.

Using decerebrate cats, the axons of motoneurons supplying either the medial gastrocnemius or biceps femoris muscle will be penetrated in ventral root filaments two at a time. After the physiological makeup of each unit is determined, the sequence of recruitment of the two units will be evaluated during muscle stretch, natural and electrical activation of cutaneous afferents, and electrical stimulation of the mesencephalic locomotor region of the brainstem. Based on work from this and other laboratories, these stimulation regimes are designed to reveal purported shifts in recruitment strategy. Stimuli will also be delivered in combination, in order to test predictions that the firing of certain types of motoneurons may be inhibited in some conditions. Two principal hypotheses will be tested: 1) The activation of motoneurons within a single motor nucleus changes in certain motor tasks. 2) The organization of motor units in different tasks reflects different functional needs.

RISP INDEXING TERMS FROM CRISP THESAURUS:

* 0182 1635 T cat

* INDICATES TERM USED FOR SEARCH
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OURCE: CRISP FORMAT Z FY 94 LAST UPDATE 02-09-95

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DATE: June 23, 1992

REPORT TO: M. S. Silberman, DVM

FROM: N. Lehner, DVM and J.W. Manning, PhD

SUBJECT: IACUC INVESTIGATION: "HOT WATER"

On June 19, a complaint was issued by an employee of Yerkes Primate Center, Main Station that a co-worker had thrown hot water on a male chimpanzee to force the animal into a transportation cage. The alleged incident had occurred twelve days prior.

In our investigation we interviewed both parties, their immediate supervisor, and four co-workers. The facts as we perceived them are that a bucket of hot water was used [illegible] the water was thrown in the direction of the animal and that some, if not all, of the water splashed on the chimp. The bucket of water, with visible steam vapor, was presented as a threat to the animal and as a means to induce a reluctant animal into an appropriate response. Unfortunately, possibly out of frustration in this case, the water was thrown after the animal was in the cage. The reason given for the twelve day delay in reporting the incident to a supervisor was the unwillingness on the part of the accuser to confront a friend.

The use of hot water to obtain a desired response from a primate was a practice employed in the years past at the Center. This activity had been outlawed by the Central Administration at the Center. In recent times, the prohibition was reiterated. However, it is the investigator's opinion, that the use of hot water as a lesser evil than having to repeatedly drug an animal by darting to gain the same end, is still in practice.

The accused is a valued employee with a number of years of experience. She is held by some, at the Center, in high regard in her efforts to give genial and kind care for the animals under her charge. In light of this evaluation, perhaps some professional counseling is in order for the accused employee.

There are 3 other caretechs that came forward. They videotaped what they ~~some~~ saw at Emory. Advise if you wish to view.

STREETALK LETTE

WHY IS THE PUBLIC SO FASCINATED BY MADONNA?

BY JEFF SLATE

Nena, Atlanta:
She's forbidden. She took the forbidden and put it in your lap. She's everything your mother told you to stay away from and, therefore, it has a certain friction to it. It makes you want to be like her. After all, she made herself — she made Madonna — all in a very calculating manner. She made being risqué acceptable to a younger generation. Who wouldn't wish they couldn't map out their plans as successfully as she did. She represents a wildness that a lot of people are afraid to exhibit but want to. If I had the boobs and the talent like Madonna, I'd wear a steel bra and a "boy belt," too.

Bill, Atlanta:
Sex, sex, sex. She's exploited it better than anyone, even better than Monroe. There is no way I would ever, ever buy anything of hers, yet I have no problem looking at nude photos of her, and her videos are the most risque I've ever seen. They are really sexy. You have to like somebody who doesn't give a damn whether she does it with an older man's

CREATIVE LOAFING
MAY 18, 1991

TORTURE TAXES

The Editors:

For nine months during '89 and '90, I was employed as a primate technician on the great ape wing at Yerkes Primate Research Center. Since reading Anne Corwin's article on the center [*CL*, April 6], I would like to share some specific experiences and try to refrain from ranting.

The "noninvasive" research I saw was nothing short of government-funded torture. Imagine overhearing a doctor say, "Oops!" during a spinal tap!) I have seen lit matches applied to the finger of an orangutan to make her release the bars of a cage. I have seen extreme cases of infant abuse and even cannibalism due to mothering instincts driven haywire.

Even animals who are kept only for breeding purposes undergo unacceptable trauma from overcrowding, filth, ear-damaging noise and fighting. For weeks on end during winter months they are confined to the indoor portions of their cages; flu epidemics affect the colony and its caretakers alike. Some of these apes were rejects from sign-language projects and signalled frantically as I passed. Others were former pets who made the mistake of growing to full maturity. Many chimps at Yerkes are short the usual number of digits and ears, not to mention the employees who lost fingers while I was there. Some apes have holes in their skulls where monitoring equipment was once implanted. Some are ex-addicts who shake around in their concrete boxes all day. I saw baboons strapped twice a day into immobilizing chairs to have their gums experimented upon. The list goes on....

I resigned from Yerkes when they built supposedly insect-proof screens around my wing for an African black fly sleeping sickness project. I am sorry to bother you with all this, but consider where your taxes are going.

Ian Cook
Atlanta

Our findings:

(1) Under reporting - After a complete and thorough review of IACUC protocols, necropsy reports, IACUC meetings there was no findings of under reporting. A review of veterinary care records and an interview with the Chief Clinical Veterinarian and his assistant failed to detect any violations in reporting. Animals used in each protocol are kept on an updated monthly report. The Chief Veterinarian, Dr. Noah Lehner, is very knowledgeable of USDA standards and is responsible for issuing the Annual Report of Research Facility (APHIS Form 7023).

(2) Inadequate Veterinary Care for animals with indwelling venous catheters - A review of all health records involving primates with indwelling catheters was completed. A cross reference review was done of all animals where amyloidosis or septicemia was a diagnosed item. A review of all necropsy reports on animals which had septicemia or amyloidosis was completed. A cross reference review of necropsy reports where amyloidosis or septicemia was diagnosed was completed. Also interviews with veterinarians and researchers was conducted. Only two deaths from septicemia caused by indwelling catheters was noted and these animals did receive adequate treatment. We did not find information to prove the allegation of inadequate veterinary care.

(3) Animal abuse and mishandling - We reviewed a videotape of allegations of mishandling and abuse of animals. The complainants were former employees of Emory University and did work as animal caretakers at the university. There also were two employees who we interviewed that stated inhumane methods were used to move or handle animals. A full investigation of these complaints was completed by the IACUC prior to our visit and it details Emory University's attempt to correct any further mistreatment of animals. We investigated these and other complaints regarding electric shock, water deprivation and prolonged chairing of primates. I specifically allowed myself to experience the electric shock administered to monkeys during a research protocol. We inspected research sites and equipment, interviewed researchers, animal caretakers, and observed animals being handled and placed in chairs.

* Video tape Available

Our Findings: it is clear that animal mishandling did occur at Emory University. In the use of high pressure water hoses, directed on animals and their faces, the use of very hot water thrown on great apes, the use of BB guns to intimidate or injure great apes to move them into handling facilities.

The IACUC report addressed responses the Emory University should take to correct these deficiencies and all physical abuse of animals has promptly stopped. Emory University has disciplined personnel responsible for incorrect handling procedures but has not addressed IACUC suggestions to provide more senior caretakers or the initiation of behavior modification training for the animal caretaker staff to use in humanely handling of primates.

Additionally, one caretaker told us she was harassed and subjected to jokes from mid-level supervisors because of her complaint to the IACUC. Dr. Silberman informed us that he would personally interview this employee and take steps to resolve this problem.

Water Deprivation and Chairing - Dr. Hendricks and I reviewed protocols involving chairing and the use of water deprivation as a method of training primates.

An inspection of the laboratory was completed and review of handling techniques were observed. Both the chief investigator and the attending veterinarian were interviewed. A review of the SOP's used and daily reports on care showed that inadequate attention to the monitoring of animals may be occurring. The inspection report noted this deficiency and it was further discussed on the exit interview. Adequate monitoring of animals to assure that they are receiving adequate hydration has been initiated.

There was no observed deficiencies in the handling methods used to chair primates or in the length of time the primates were in chairs (no more than six hours).

Inadequate Care of Animals (Elena and Magnum) - We conducted a review of the health and behavior records of Elena and Magnum. These animals were specifically singled out as examples of animal abuse in the video tape made by the prior employees. We were able to see Magnum, who appeared to be a normal healthy chimpanzee. Although behavior problems did occur with these animals, there was no findings of inadequate care on behalf of the Emory veterinarians or animal care staff.

An exit interview was conducted on Friday, July 2, 1993, with Drs. Silberman, Manning, McClure and their staff. We reviewed our findings and recommendations and I felt that the Emory University Officials were very receptive to our report and recommendations.

cc:
Dr. Silberman
Dr. Hendricks
Dr. Overton

water deprivation
training —
training for what?

U.S. DEPARTMENT OF AGRICULTURE
ANIMAL AND PLANT HEALTH INSPECTION SERVICE

CONTINUATION SHEET FOR ANIMAL CARE INSPECTION REPORT (S)

(APHIS FORMS 7004 and 7008)

1 LICENSEE OR REGISTRANT AND NUMBER	2 LIC. OR REG. NO.	3 DATE	4 PAGE
Emory Univ.	57-R-003	2-7-95	2 OF 4

5 LOCATION OR SITE	6 WAYBILL NUMBER AND DATE (If Applicable)
Yerkes Main Campus	NA.

7. NARRATIVE: I. Non-compliant item(s) previously identified that have been corrected II. Non-compliant item(s) previously identified for which time remains for correction. III. Non-compliant item(s) identified this inspection. IV. Non-compliant item(s) previously identified that have not been corrected

Continues Category III New NON Compliant Items this Insp.

H 37 3.84 (d) Dead insects are present in the light fixtures in the following rooms. RV Build rooms 10 and 11, IDB Build. rooms # 104 & 103. Correct by 2-15-95

H 48 2.33 Veterinary Care - Expired drugs such as Acepromazine and Sodium Chloride were present in room 270 of the Small Primate Wing. Removed this Insp.

2.33 (b)(5) Two primates were observed recovering from anesthesia. Primate # 10208 was placed in a cage for recovery that contained a resting bar that could result in injury to the animal. The other primate was placed directly on a wet concrete surface for recovery. Primates recovering from anesthesia must be monitored closely and provided adequate post procedural care. - Correct by 2-10-95

H 49 2.31 (d) (1) (ii) - Alternatives - Protocol # 1991-05-01 did not list the sources used to determine that alternatives were not available - Protocol # 1993-2-05 did not address alternatives to the procedure that may cause more than slight pain. - Correct by 3-7-95

IV NON Compliant Items Corrected None

PREPARED BY	TITLE	DATE
[signature]	Vmo	2-7-95
COPY RECEIVED BY	TITLE	DATE
[signature]	Assoc. Direc. Animal Resources	2-7-95
REVIEWED BY	THEOSTER MATHER, DVM AREA SUPERVISOR - ANIMAL CARE SOUTHEAST SECTOR	DATE

APHIS FORM 7106
AUG 91

PART 1 - SECTOR OFFICE

U.S. DEPARTMENT OF AGRICULTURE
ANIMAL AND PLANT HEALTH INSPECTION SERVICE

CONTINUATION SHEET FOR ANIMAL CARE INSPECTION REPORT (S)

(APHIS FORMS 7004 and 7008)

LICENSEE OR REGISTRANT AND NUMBER	2. LIC OR REG NO	3. DATE	4. PAGE
...ory Univ	57-R-003-12	5-19-93	2 OF 2

BEST COPY AVAILABLE

LOCATION OR SITE: ...llings Research Center

6. WAYBILL NUMBER AND DATE (If Applicable): NA.

NARRATIVE: I. Non-compliant item(s) previously identified that have been corrected. II. Non-compliant item(s) previously identified for which time remains for correction. III. Non-compliant item(s) identified this inspection. IV. Non-compliant item(s) previously identified that have not been corrected.

...tegory I and II - None

III. New non compliant item this date.

...49 2.31 (d) (1) (iv) (A) Protocol # 192-90 - The type and method of anesthesia or analgesia to be used to control pain or distress is not described.

...(d) (1) (vii) - The protocol must state that medical care for the animals will be provided if necessary by a qualified veterinarian.

Protocol # 140-90

2.31 (d) (1) (iv) (B) There is no indication that the attending veterinarian or his designee was involved in the planning of this Protocol - or consulted.

(d) (1) (vii) This protocol does not state that medical care will be provided by a qualified veterinarian if needed.

Correct all 2.31 noncompliance by 6/19/93

...tegory IV - None

...anesthesia not ... described. Was ... anesthesia ... used in ... experiment? -- Did animals ... need veterinary care? -- Yet involved in this experiment?

H. W. Hendrick	TITLE: VMO	DATE: 5-19-93
COPY RECEIVED BY: [signature]	TITLE: Chair IACUC	DATE: 5/19/93
REVIEWED BY: [signature]	TITLE: R.D. OVERTON DVM ANIMAL CARE SPECIALIST	DATE: MAY 27 1993

APHIS FORM 7100 — PART ... SECTOR OFFICE — U.S. GPO 1991-0-526-375 40140

U.S. DEPARTMENT OF AGRICULTURE
ANIMAL AND PLANT HEALTH INSPECTION SERVICE

CONTINUATION SHEET FOR ANIMAL CARE INSPECTION REPORT (S)

(APHIS FORMS 7004 and 7008)

1 LICENSEE OR REGISTRANT AND NUMBER	2 LIC. OR REG. NO	3 DATE	4 PAGE
Emory Univ	57-R-003	2-8-95	2 OF 2

5 LOCATION OF SITE	6 WAYBILL NUMBER AND DATE (If Applicable)
Clifton Rd Atl. Ga. 30322	

7 NARRATIVE: I. Non-compliant item(s) previously identified that have been corrected. II. Non-compliant item(s) previously identified for which time remains for correction. III. Non-compliant item(s) identified this inspection. IV. Non-compliant item(s) previously identified that have not been corrected

Category I NON Compliant items prev. identified that are Corrected = NA

Category II NON Compliant items for which time remains for Correction = NA

Category III New NON compliant items identified this date =

45 2.38[g] Identification of Cats - Tags used list a previous dealers Lic.. # 57-B-017 - Should not be used on the identification tags. Corrected by 3-9-95

Category IV. NON Compliant items prev. identified that have not been Corrected = None

8 PREPARED BY (Signature)	9 TITLE	10 DATE
Hugh Hendrick	VMO	3-9-95
11 COPY RECEIVED BY (Signature)	12 TITLE	13 DATE
14 REVIEWED BY (Signature)	15 TITLE M. FOSTER MATHER, D.V.M. AREA SUPERVISOR - ANIMAL CARE SOUTHEAST REGION	16 DATE

APHIS FORM 7004

U.S. DEPARTMENT OF AGRICULTURE
ANIMAL AND PLANT HEALTH INSPECTION SERVICE

CONTINUATION SHEET FOR ANIMAL CARE INSPECTION REPORT (S)

(APHIS FORMS 7004 and 7008)

1 LICENSEE OR REGISTRANT AND NUMBER	2 LIC OR REG NO	3 DATE	4 PAGE
Emory Univ. BEST COPY AVAILABLE	57-R-003	2-7-95	2 OF 2
5 LOCATION OR SITE	6 WAYBILL NUMBER AND DATE (If Applicable)		
Yerkes main Campus Site 13	NA		

NARRATIVE: I Non-compliant item(s) previously identified that have been corrected. II Non-compliant item(s) previously identified for which time remains for correction; III Non-compliant item(s) identified this inspection. IV Non-compliant item(s) previously identified that have not been corrected

Category I Non compliant items prev. identified that have been corrected=

#13 3.75(e) Food storage room - Vinegar and Acetone sol removed - only food and bedding stored in food rooms.

#26 3.78 (d) The perimeter fence is now complete around the outdoor chimp play area.

#29 3.80 (a) (2) (i) Cages in room # 101 of the ID-B building [illegible] corrected or removed from use.

#33 3.81 (d) Primates placed in restraint devices are monitored closely and if restrained for more than 12 hours are provided with at least one continuous hour of unrestrained activity.

Category I Compliant items prev. identified for which no correction = none

7 PREPARED BY	8 TITLE	9 DATE
[signature]	VMO	2-7-95
10 COPY FURNISHED TO	11 TITLE	12 DATE
[signature]	Associate Director/Animal Res	2-7-95
13 REVIEWED BY	14 FOSTER MATHER, DVM AREA SUPERVISOR - ANIMAL CARE SOUTHEAST REGION	15 DATE
[signature]		[illegible]

APHIS FORM 7106

U.S. DEPARTMENT OF AGRICULTURE
ANIMAL AND PLANT HEALTH INSPECTION SERVICE

CONTINUATION SHEET FOR ANIMAL CARE INSPECTION REPORT (S)

(THIS FORMS 7004 and 7008)

1. LICENSEE OR REGISTRANT AND NUMBER	2. LIC. OR REG. NO.	3. DATE	4. PAGE
Emory Univ	57-R-003	2-7-95	3 OF 4

5. LOCATION OR SITE	6. WAYBILL NUMBER AND DATE (If Applicable)
Yerkes Main Campus Site 13	

NARRATIVE: I. Non-compliant item(s) previously identified that have been corrected. II. Non-compliant item(s) previously identified for which time remains for correction; III. Non-compliant item(s) identified this inspection. IV. Non-compliant item(s) previously identified that have not been corrected

Category III New NON Compliant items identified this date =

10 3.75(c)(1) The vertical Cage in room D2 of the R-C Building has a sharp wire point. Build. CF-one (#5) enclosure has a broken PCV pipe with jagged edges. Correct by 2-9-95

12 3.75 (c)(2) Maintenance and replacement of surfaces. The stone hard surface coating is eroded in the following rooms: 105 of the Eye building, rooms 104 and 103 of the I.D.B Build. Paint w/ flat cvg from the ceiling and wall in room 14 B of Build. T-14. Correct by 3-7-95

14 3.75 [illegible] has poor surface drainage resulting in standing water. Correct by 2-15-95

15 2.76(c) Two NON functional light fixtures in the following buildings: R-Build. room # 5 and 6, R-C Build. room 02, in RV Build. room: 10 & 11 one in RA building room 67. Correct by 2-15-95

33 3.81(a) Social grouping as part of environmental enhancement. A large number of primates are housed separately. Social grouping is encouraged when possible. A plan must be developed in 30 days to reduce the number of singular housed primates.

7. PREPARED BY (Signature)	8. TITLE	9. DATE
[signature]	VMO	2-7-95
10. RECEIVED BY (Signature)	11. TITLE	12. DATE
[signature]	Assoc. Dir. Animal Res.	2-7-95
13. REVIEWED BY (Signature)	14. TITLE M. FOSTER MATHER, DVM AREA SUPERVISOR - ANIMAL CARE	15. DATE

U S DEPARTMENT OF AGRICULTURE
ANIMAL AND PLANT HEALTH INSPECTION SERVICE

CONTINUATION SHEET FOR ANIMAL CARE INSPECTION REPORT (S)

(APHIS FORMS 7004 and 7008)

1 LICENSEE OR REGISTRANT AND NUMBER	2 LIC OR REG NO.	3 DATE	4 PAGE
Moru Univ.	57-R-003	2-2-94	2 OF 2
5 LOCATION OR SITE	6 WAYBILL NUMBER AND DATE (If Applicable)		
Goodrich Memorial Build (01)	NA		

NARRATIVE I Non-compliant item(s) previously identified that have been corrected II Non-compliant item(s) previously identified for which time remains for correction. III Non-compliant item(s) identified this inspection. IV Non-compliant item(s) previously identified that have not been corrected

Category I NON compliant items prev. identified that have been corrected = NA

Category II NON compliant items for which time remains for correction = NA

Category III NEW NON Compliant items identified this inspection

#10 3.50(c), #11 - 3.11(a) and 3.75(a) Food Storage room #2 contained an accosol can of cleaner. Items other than food & bedding must be stored elsewhere. This was corrected this date.

47 2.38(f)(2)(ii) - Water deprivation - The monitoring log for animals #ID 12-226 was obscure in that it was not initialed and contained old log records. Interim period Rescanned but no notation of Feb 2 and 3 the animals received any water. Good clear description of monitoring procedures must be provided to IACUC, approved water deprivation activities. Correct by 2-10-94.

Procedures not provided for water deprivation

Category IV NON Compliant items prev. been corrected = NONE

PREPARED BY (Inspector) — TITLE — DATE
Mark Goodrich — APHIS — 2-3-94

COPY RECEIVED BY (Licensee) — TITLE — DATE
2-7-94

REVIEWED BY — TITLE: FOSTER MATHER DVM AREA SUPERVISOR - ANIMA SOUTHEAST SECTOR — DATE 2/10/94

APHIS FORM 7100 (AUG 91)

PART 1 - SECTOR OFFICE