

SUMMER SCHOOL IS MONKEY BUSINESS

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It was late in the afternoon. Twilight. The fire had burned low. On its edge a monkey chow bag smoldered. The graduate students who had been watching the fire were looking the other way, distracted by the sunset.

A rhesus monkey's head came from behind a tree. Attracted by the glow of the fire, he had come to investigate. He saw the monkey chow bag and knew what it was. He saw the humans but wasn't afraid; he had been around humans all his life. But he cautiously, quietly approached the dying fire because it was something new and strange.

When he was an arm's length away from its edge, he snatched the food bag and raced up the nearest tree. The wind generated by his rushing up the tree made the dried bag burst into flame as he left the trunk of the tree and ran onto a limb. The fire frightened yet fascinated the rhesus. He screamed at the bag instead of releasing it.

In the closing darkness the graduate students turned and saw the blaze in the tree. It was a dry time of year, not much rain that summer. They were frozen for several seconds, knowing the whole tree could ignite, and then the forest. They had to alert the others!

"The tree's on fire, the tree's on fire," screamed one student.

Her voice broke the monkey out of his hypnosis and he dropped the bag. It floated to the earth like a small Hindenburg. The graduate students were on it and stamping. A major tragedy had been averted. A minor one hadn't: the primatologist in charge had seen what happened.

"Nice work, burn the whole island down."

Morgan Island is located just outside the mouth of a small river that meets the ocean near Charleston, South Carolina. It is the home of the Yemassee Primate Center, a division of Organon Biomedics, a government contracted medical research and development corporation.

Yemassee Primate Center has two reasons for its existence. It is a field school for novice anthropologists and veterinarians

interested in primate behavior. Veterinarians use animal models for human diseases; however, many vets don't know the data-taking procedures of field primatology. Here, they can learn them. Also, Yemassee is a breeding ground for rhesus monkeys used in medical research.

Originally, monkeys used to advance medical studies were imported from tropical countries. However, due to the expense, difficulties of capturing wild monkeys, and the complications involved with using cage raised monkeys, the United States government provided the funds to set up an experimental monkey ranch in 1979. With the controlled breeding that Yemassee provides, unexpected genetic factors no longer complicate medical research. Before the controlled breeding at Yemassee, veterinary and medical researchers could never be sure if the effects of a new drug or research procedure were partially influenced by unusual genetic and/or physiological factors of wild or psychotic monkeys. Many monkeys raised in isolation cages for medical research purposes develop psychotic behavior such as head banging and toe sucking. Cage raising may cause subtle physiological changes which could complicate research. By raising monkeys in an environment as close to natural as possible at Yemassee, these problems are avoided.

The Yemassee Center is directed by Dr. David Taub, formerly with Bowman Gray Medical Center in Winston-Salem. During the summers, Taub is assisted by four anthropologists specializing in primatology, one of whom is Dr. Laura Vick of UNCG.

According to Vick, the Center began with a population of about 1,500 rhesus monkeys imported from Puerto Rico. The breeding experiment has been so successful that 3,500 to 4,000 monkeys are chosen each year by government request for laboratory research at various medical centers. However, a great deal of field research is carried on at Yemassee, including studies of mother-infant behavior, mate selection and altruism-aggression responses.

Before the existence of the center, field experience for anthropology graduate students and novice veterinarians was difficult to obtain, Vick said. Now, for a tuition of about \$1,000, these young scientists can learn hands-on, step by step field research, including computer use.

A thousand dollars might sound like a lot for a five-week course, but tuition includes field equipment, portable computers, a large backup computer, food, motel rooms with cooking facilities on the mainland and ferry rides to and from Morgan Island every day. Each of the five instructors spends a week in charge of teaching and also acts as a field advisor for his or her small group of students.

Research includes how to follow, census, determine age and gender, and habituate wild monkeys to the presence of humans. The students also learn how to take ad lib field notes.

For the beginning primatologists, these procedures are more difficult than they may sound, Vick said. On a daily basis, each student's recording of data is directed to one specific problem using different experimental techniques. In the afternoons, these techniques are evaluated and problems are discussed in regard to what does and does not work. This method develops a step by step procedure on how to do primatological field research.

Students also learn how to determine the age and sex of skulls and other osteological (bone and teeth) remains. These data are called mortality profiles and include, when possible, the cause of death based on clues found on and in the remains.

Land navigation, how to lay out maps and track monkeys by radio collar is also taught.

All of the information gathered at the Primate Center goes into a general data bank to determine primate demographics; these are statistics concerning breeding and birth patterns and female reproductive success. Thanks to these studies, new theories concerning mating strategies have been partially confirmed.

For many years, animal scientists believed that mating strategy consisted solely of males fighting over females. Over the last two decades, it has been hypothesized that females choose which males to mate and develop consort relationships with. Studies at Yemassee have partially confirmed this hypothesis: rhesus monkeys place more emphasis on peaceful female initiated consortship than they do on male combat.

A major event at the monkey ranch is the roundup. This is done for the purpose of tattooing babies and gathering additional information on monkey health as well as culling the population.

Monkey roundups are not difficult to accomplish. The monkeys are trapped in corrals which consist of increasingly smaller, connected enclosures. At feeding time, food is placed in the corrals. The monkeys climb trees outside each corral and leap inside. Then they are driven into the smaller enclosures until the monkeys are in a box so small that they cannot turn around. Then the monkeys are injected with a tranquilizer.

The tranquilizer keeps the monkeys from being traumatized when they are weighed, measured, shaved and tattooed for identification, mainly by the students. Female monkeys are subjected to vaginal smears to determine which stage of the estros (ovulation) cycle each monkey is in.

The days at Yemassee begin with a 5:30 wake up. A student prepared breakfast begins at six o'clock and the ferry crossing to the island begins at seven. Students and instructors work until one o'clock in the afternoon, often in weather reaching temperatures over 100 degrees. After breaking for lunch, afternoon evaluations and a return ferry ride to the mainland, the students prepare a communal supper. This is a part of the field school design to provide an informal atmosphere, Vick said. The instructors feel that this enhances interpersonal communication between students and instructors, and facilitate learning since the main topic usually continues to be primatology.

Near the end of the summer session, the class takes a field trip to Saint Catherine's Island, located 70 miles off the South Carolina coast. This island is the home of a research center run by the New York Zoological Society and the Saint Catherine's Island Foundation. It is a breeding center for rare and endangered species. Here the students acquire a basic familiarization with not only rare monkeys and apes, but other exotic animals as well.

If one has a background in veterinary medicine or anthropology and is interested in attending the Yemassee Primate Center's summer field school, specific information can be obtained on dates, tuition, etcetera by contacting UNCG's anthropology department. Each graduate of the field school receives a tee-shirt with a picture of a rhesus monkey and the logo: Boss Taub's Primatology Boot Camp.