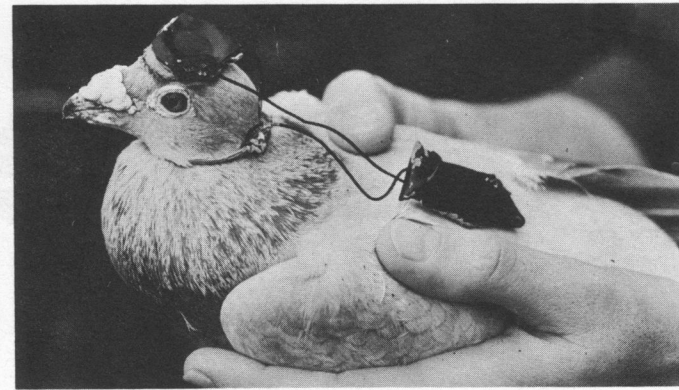


animal, vegetable or mineral? see page 4



what's bugging this bird? see page 4

A MONTHLY PUBLICATION OF THE STATE UNIVERSITY OF NEW YORK AT STONY BROOK

New Med School Plus New Programs, Faculty, Staff, Students Mark Term Opening

The opening of the Medical School, the appointment of Stony Brook's fifth Distinguished Professor, the addition of five advanced-degree programs and broadened undergraduate study options are some of the significant academic changes instituted this year despite stringent fiscal limitations.

Administratively, a major change is Dr. Sidney Gelber's appointment as academic vice president, the University's highest academic office. Dr. Gelber has been shaping academic policies since joining the University as philosophy department chairman in 1958. His last post was vice president for liberal studies. Dr. Gelber succeeds Dr. Bentley Glass who is retiring from the administration while continuing to serve as Distinguished Professor of Biology and editor of the *Quarterly Review of Biology*.

The Medical School opened August 9 with its first class of 24 students, whose education was sure to bear the innovative stamp of Dr. Edmund D. Pellegrino, an eminent educator who serves as dean of medicine and vice president for health sciences. They will have intensive clinical training enabling them to finish their studies in three, rather than four, years. They will be able, in some cases, to begin specialized study while still in medical school and will be encouraged to relate their study to the humanities and social sciences.

Stony Brook's fifth Distinguished Professorship, a title conferred by the University Trustees in Albany, was awarded to Dr. Justus Buchler, whom scholars have called America's outstanding living naturalistic philosopher — in a line that includes Dewey, Whitehead and Santayana.

Dr. Gelber says Dr. Buchler is "probably the most creative systematic American philosopher since Dewey." Jacques Barzun, writing in the *The American Scholar*, called Dr. Buchler's *The Concept of Method* a liberating and comprehensive book. The same book was rated by James Collins in *Great Ideas Today* as a major work of lasting value.

As a teacher, too, Dr. Buchler has won warm praise from his peers and his students. At Columbia, where he served almost 30 years, last year's Columbia-

Barnard Course Guide called him a "brilliant and commanding instructor who can inspire a student to excellence regardless of his field."

The other Distinguished Professors at Stony Brook are Dr. Bentley Glass in biology, C.N. Yang in physics, Alfred Kazin in English and Lewis Coser in sociology.

Dr. Buchler's arrival coincides with the beginning of master's and doctoral degree programs in the philosophy department. New advanced study programs, also for the master's and doctoral degrees, are also beginning this year in computer science and in Hispanic studies. And the earth and space sciences department, which offered a single advanced degree program last year now offers three — bringing to more than two dozen the number of master's and doctoral programs now offered at Stony Brook.

The total number of graduate course offerings is up this fall from 625 to 700, including 69 courses offered in continuing education, which provides evening classes for working adults seeking a master's degree in liberal studies.

At the undergraduate level, options for fields of major study have increased from 18 to 20 with the addition of majors in Italian and computer science. Environmental studies and Ibero-American studies have been added to the roster of interdisciplinary programs, which now include Asian studies, black studies, comparative literature, elementary education, linguistics, religious studies and social sciences. Interdisciplinary study allows a student to approach a broad area of knowledge from the viewpoints of several academic disciplines. A new program has been established in teacher training to give some 60 junior and senior teacher trainees a year of field work in "open education training," a British-developed concept aimed at fostering individually-paced learning.

The total of undergraduate course offerings has been increased by 200, to 1250. These include two courses in Puerto Rican culture and education: *Civilization and Culture of Puerto Rico*, and *Educating the Puerto Rican Child*. Some of the other new course offerings include: *Peoples and Cultures of the Middle East* (anthropology), *Comparative African Religions* (black studies), *Philosophical Foundations of Feminism* (philosophy), *Student Politics* (political science), *Filmmaking Workshop* (theatre

arts), and environment-related courses offered in both science and social science departments. There will also be new courses in pre-school education, and training teachers to work with mentally retarded children.

In engineering, student initiative has led to the offering of three new courses concerned with social and environmental problems — *Engineering and Managerial Economics*, *Analysis of Public Systems*, and *Power Systems*.

The Health Sciences Center, besides opening its Medical School, has continued to grow in several areas. The School of Social Welfare began enrolling full-time bachelor's and master's

New Med Students: A Mixed Bag

Two engineering students, a sociologist with a Ph.D. degree, a son of Greek immigrant parents, two minority-group members, and eight women including a 35-year-old housewife are among the 24 students in the first class of Stony Brook's School of Medicine.

The class does not lend itself to a composite profile for the very reason that maximum diversity of social and economic backgrounds was sought in selecting the class from 2600 applicants.

The class's median age is 23.8 years; the youngest student is 20 and the oldest, 35. Of the 24, 19 are from New York State, three from California, one from Tennessee and one from Massachusetts. Their undergraduate work was done at 16 colleges, with four coming from Stony Brook, three from Cornell and two each from Columbia, the University of California and the University of Chicago.

As undergraduates, 10 of the 24 pursued biology; six majored in related areas, such as biochemistry and zoology; two majored in engineering; two in mathematics; and one each in geology, philosophy, social science and sociology/philosophy.

The 35-year-old housewife, who had been a licensed midwife before leaving her native England 12 years ago, is one of the class's two registered nurses.

The Medical School had hoped to enroll more than two minority-group members, but uncertainty about available financial aid is believed to have caused some minority applicants to accept positions at other schools. □

degree candidates — anticipating about 50 in each category. The School of Basic Health Sciences has ten doctoral candidates. The School of Allied Health Professions was expected to enroll 95 full-time students, most of them in six new programs — bachelor's degree programs in Community and School Health, Health Science Technology, Medical Technology, and Physical Therapy; a master's program in Health Services Administration; and a three-year non-degree certificate program for physician's associates. The School of Nursing, which just graduated its first class of 16, is expected to enroll 141 full-time B.S. candidates this fall.

All program development was accomplished despite a \$1.2 million cut from Governor Rockefeller's proposed budget for the Stony Brook campus. This cut meant that the core-campus faculty was held at 800. The health sciences on-campus full-time faculty has increased to 131; part-time faculty to 65. Another 61 faculty members, including many volunteer and part-time teachers, are staffing the clinical campuses.

While most of the projected 380 full-time students in the Health Sciences schools represent new enrollment, the headcount of core-campus students has not risen dramatically this year.

Overall fall term enrollment was expected to be about 13,350, with the anticipated full- and part-time graduate and undergraduate enrollment excluding Health Sciences at 11,088 — up from the 10,966 figure of a year ago. This reflects a drop in full-time undergraduates from 8332 to a projected 7918 and an increase in full-time graduate students — from 1249 to 1343. The number of full-time doctoral candidates, however, was expected to rise about 50%, from 623 to 934.

The University received some 8850 applications for the 968 places in the freshman class, doubling the previous four-to-one ratio of applicants to positions. The 450-student Advancement through Individual Merit (AIM) program received 966 applications for an anticipated 129 freshman openings, also doubling last year's applicants-to-positions ratio for about the same number of spaces. Transfer students increased from 400 last year to 970, with applications also up — from 2300 to 3000. Of those, virtually all who had completed two-year community college programs were admitted. □

Summer 1971

On Campus

Summer '71 saw a host of widely diversified activities on the University campus. These included Stony Brook's seventh and largest Summer Session, other academic programs from the high school through the graduate level, a full schedule of entertainment and recreation provided by the Stony Brook Union, an athletic program featuring swimming and softball, and many other events ranging from a meeting of airline stewardesses learning about collective bargaining to a conference of scholars from Europe and many parts of this hemisphere called together to study "the new Latin American novel."

The academic summer on campus included the sixth annual Upward Bound college preparatory programs which offered instruction to 75 disadvantaged high school students from eastern Long Island; research programs at the high school and college levels for talented physics students; a record-breaking 113 courses during the regular six-week Summer Session; 29 courses offered in the Center for Continuing Education's master's degree program; special teacher-training sessions on drug abuse prevention offered by the Health Science Center's School of Allied Health Professions; and the initial two allied health professions courses in a new program of health teacher certification aimed at easing the shortage of health teachers in the area. □

A Karate Conference provided intensive training for 50 advanced students of karate schools in the metropolitan area.



Thirty members of the Airline Stewards and Stewardesses Association met to discuss labor-management problems.

Workshops were held to give 115 Suffolk elementary school science teachers first-hand experience with laboratory materials and apparatus.



Over 600 new students attended orientation sessions organized by Donald Bybee, center.



International students on campus organized a soccer league.

Upward Bound recreation programs and college preparatory courses were attended by 75 disadvantaged high school students.



Students Robert Lemieux and Richard Markel analyzed the composition of Smithtown's refuse to determine how much is recyclable, combustible, compactable and convertible to compost.



Student Douglas Snyder and David Brown worked with Brookhaven Town Councilman William E. Regan (left) on a development study of the land surrounding Brookhaven Airport.



Eleven students spent 12 weeks studying the ecological effects of dredging in Mount Sinai Harbor.



Art major Christine Ober was guest managing editor for Mademoiselle's August issue.



Students Brian Hurevitz and Jonathan Bromberg studied traffic and parking problems in Port Jefferson.



Faculty and students from the University's Marine Sciences Research Center studied fish, wildlife and navigation at a summer program on the Isles of Shoals, off the coast of Maine.

Off Campus

While many folks spent the summer relaxing on Long Island's beaches, traveling or generally taking it easy, some Stony Brook people found interesting summer endeavors ranging from helping area communities solve pressing local problems to researching marine life on a Maine seacoast island.

Assistant Professor of History W. Keith Kavenagh worked with Huntington Township researching the original 17th century grants from King James which created public lands there. Graduate students from the urban sciences and engineering program worked with local towns on planning problems ranging from garbage disposal to transportation facilities.

Undergraduates spent their summers in activities which included helping organize a summer lunch program to feed 200,000 New York City schoolchildren, assisting in the editing of a noted women's magazine, building playground equipment, and analyzing moon rocks at the Smithsonian Institution. □

Can a Snail Be Both Animal and Vegetable?

"Have you discovered any green people yet?" was a recent question put to Dr. Harvard Lyman as he finished delivering a paper at an international scientific conference in Italy. Dr. Lyman, who is an associate professor of biological sciences at Stony Brook, politely told the stranger that he hasn't; green snails are as far as he's gotten.

Green snails? Dr. Lyman knows them as *Tridachia crispata*, marine slugs which average about two inches in length and look something like a shirt ruffle — usually a green shirt ruffle — with a head.

The slugs are green because they're also part plant — the chloroplast part. They feed on green algae and digest most of the plant material but, unlike most animals, they then preserve the chloroplasts and incorporate them, intact, into their tissues to color them green.

Chloroplasts contain chlorophyll, the photosynthesizing agent which helps the plant transform carbon dioxide and water into carbohydrates, oxygen, and other by-products. Tests performed by Dr. Lyman and Gregg Schmidt, a Stony Brook biology graduate student, have measured the presence in the slug of an enzyme which catalyzes photosynthesis and the tests reveal, for the first time, that the path of carbon dioxide in the slug is the same as that found in most plants. In other words, *T. crispata* performs photosynthesis just like a plant.

Dr. Lyman first became interested in *T. crispata* about two years ago when a biologist named Robert Trench wrote of discovering slugs off the coast of Jamaica which perform photosynthesis. Shortly afterwards, Dr. Lyman and a team of marine biologists, botanists and students began collecting and studying slug samples at the Discovery Bay Laboratory in Jamaica, a facility jointly operated by the State University of New York's Marine Sciences Research Center and the University of the West Indies.

One of their first observations when gathering the slugs was that the further below the surface the animals live the larger they tend to be. Also, the snails living closest to the bottom of the ocean are often a bright blue color — sometimes brilliantly fluorescent—rather than green.

The scientists also found that *T. crispata* acts as strangely as it looks. For example, the slugs cannot be seen in the water until between 4 and 5 p.m., when masses of them climb to the top of dead coral pieces, enjoy the sun for an hour or two, then drop back until the next day.

Their eating habits also proved to be odd; in fact, no one has ever seen them eating at all. Until very recently, these slugs, when removed from their native waters, would not eat any algae, even algae from their home territories, so soon died.

Having never seen *T. crispata* attacked by predators, researchers dropped a slug on a piece of live coral. Coral

is composed of tiny animals with stinging mechanisms which kill food sources, so the slug was soon paralyzed and consumed. However, a few hours later the coral began to disintegrate, as if being eaten by acid.

Dr. Lyman reports that he's never known coral to be so quickly and completely destroyed.

Although *T. crispata* would probably not be a suitable appetizer, its value is potentially great in other areas. Its ability to preserve — no matter how permanently — an organelle from a completely different phylum is one of the few examples of this process known in nature. If researchers are able to discover how the slug performs this trick they will add important data to the fields of biology and chemistry as well as the study of evolution.

That the organelle preserved by *T. crispata* is a chloroplast is even more intriguing, for pure chloroplasts are extremely difficult to grow outside plants. This is one of the reasons little is known about them. But by studying how *T. crispata* preserves chloroplasts man may learn how to grow his own, a project which would be a major scientific breakthrough.

STONY BROOK BIOLOGISTS PROBE NATURE'S SECRETS

Stony Brook researchers would like to continue their investigation of the slugs' preservation of chloroplasts by feeding them an alga which has been thoroughly studied — instead of the one they now feed on — and seeing how the familiar properties are digested and maintained. But inasmuch as *T. crispata* had previously never eaten "in captivity," this looked like an impossible task.

Fortunately samples of the slug transferred to a tank in Stony Brook's biological sciences department have stayed alive for several months, having apparently developed a taste for something in the algae from Long Island Sound which floats in their tank. This first example of survival outside native waters gives Dr. Lyman new hope for feeding *T. crispata* another alga.

Dr. Lyman calls his study of the slug "fun research" because of the aesthetic pleasure and constant delight involved in observing the many quirks and mysteries of the plant-animal. At the same time, the chance that it will result in the isolation and growth of pure chloroplasts makes it very valuable research.

—Susan Rutherford □

How Do Homing Pigeons Find Their Way Home?

How do homing pigeons find their way home when released in a strange area many miles away? The pigeons' secrets are not fully understood, but scientists like Dr. Charles Walcott are slowly getting closer to the answer.

Dr. Walcott, associate professor of biology at Stony Brook and an expert on bird navigation, works with pigeons equipped with tiny radio transmitters so they can be tracked by airplane as they wend their way home.

"There are three general explanations of pigeon navigation," Dr. Walcott says. "Homing pigeons can use the sun as a compass, or navigate by use of landmarks, or employ a third, unknown factor which they use to orient themselves when they've been displaced with no apparent clue to the direction of their home. It is this third factor, which may be the key to animal 'homing,' that we're trying to discover."

Pigeons use the sun much in the manner of a Boy Scout, Dr. Walcott says. The birds orient themselves with the sun while flying a course home just as a scout might keep the sun over one

shoulder while hiking through unfamiliar territory. Pigeons can be artificially "detoured," Dr. Walcott explains, by keeping them in a darkened box with a light bulb used as an artificial sun. If the box is kept dark for several hours after the real sunrise and the light is turned off before the pigeons are released, they will fly a course which is off by an amount related to the distance the real sun has moved through the sky while the box was kept dark.

Using the second known method of navigation, following landmarks, pigeons fly a course in a manner similar to that used by an airplane pilot navigating by visual reference to the ground. "When the sun is visible," Dr. Walcott says, "a pigeon following the route of a highway will fly more or less a straight course, but when ceilings are low and the sun is obscured by clouds, pigeons tend to follow right along each bend in the road." Pigeons generally fly just above tree-top level on their way home, sometimes spiralling up to higher altitudes for a look around, Dr. Walcott explains.

The third method pigeons use in homing on their lofts has long been a subject of conjecture. Scientists have speculated that pigeons can sense magnetic fields, and somehow use this built-in "compass" to find their way home. To test theories about this magnetic sense, Dr. Walcott secures small, battery-powered wire coils to the birds' necks. Electrical current flowing through the coils can be manipulated to produce a magnetic field of selected strength, which disturbs the normal field provided by the earth. Professor Walcott has found that the induced magnetic fields disorient the pigeons. The birds with magnetic coils do not find their way home as easily as those with no coils. Earlier, Dr. Walcott says, some scientists had thought pigeons used magnetic cues for navigation only when the sun was not visible, but further experiments have indicated that the birds' ability to navigate is affected by the coils even on sunny days, giving support to the theories that pigeons can sense magnetic fields.

In his latest experiments, Dr. Walcott found that magnetic fields only 1/10 the strength of what is normally present on the ground are strong enough to confuse the pigeons.

Even if the scientists determine that pigeons do have the ability to sense magnetic fields, they still won't have solved the whole problem of pigeon navigation; for the crucial question remains: How do pigeons know which way to start off when they are first released in an unfamiliar area many miles from their roost?

Some ornithologists thought that pigeons set their navigation systems at their home loft, then somehow kept track of their movements to a distant release point, Dr. Walcott says. However, experiments involving anesthetizing the pigeons so as to apparently erase any consciousness of where they are being taken does not seem to affect their homing ability, he notes.

Even more mystifying is the ability of homing pigeons to fly off in the right direction when released far out to sea, with no landmarks in sight. Dr. Walcott says he has released pigeons 100 miles at sea and followed them in his airplane as they struck off in the right direction for home.

Do homing pigeons really have a "sixth sense?" Only time, and more experiments like those performed by Dr. Walcott, will yield the answer to this well-kept secret of the animal kingdom.

—Bradley Berthold □

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