

the average prosecution time per patent to 3½ years.

The association points out that the patent examiner thus holds a key position in the advancement of American technology and that the only way to reduce these delays and clear the way for marketing the new products and processes is to employ new patent examiners to pass on the backlog of applications that have piled up in almost every technical field.

Steps have already been taken in this direction, and approximately 100 new patent examiners have been added to the examining staff since last June. It is understood that the Patent Office wants 300 new patent examiners in 1956; 125 in the first quarter, 25 in the second quarter, and 75 in each of the last two quarters. There are immediate openings for engineers and scientists who can accept appointments in Washington now.

Patent examiners pass on applications for patents in a wide range of technical fields to determine whether they are novel and whether invention is involved. This calls for a study of the issued patents and the related scientific literature. The association points out that the technical graduates who apply will find the job both interesting and stimulating and one that keeps them in close touch with the latest technical developments. The job offers opportunities for rapid advancement within the Patent Office. Washington also offers unusual opportunities to carry on graduate studies at the same time.

Salaries for examiners start at \$4345 a year, and it is possible to reach a salary of \$7570 in 5½ years, with salaries in excess of \$13,000 available. The Patent Office also offers vacations and sick leave and pension benefits.

Engineers and scientists who hold a college degree in engineering or applied science, or a degree with a major in chemistry or physics, or with certain combined credits in these fields, are eligible for appointment as patent examiners, without examination, upon application to the Commissioner of Patents in Washington, D.C.

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### General Principles of Cooperation on Biological Abstracting

At their annual meeting on 18 Feb. 1956, the trustees of *Biological Abstracts* formulated and adopted the following general principles to guide their future course in matters of cooperation on biological abstracting.

Recent studies of the literature of biology and its coverage by abstracting services make it very evident that there is

an urgent need for a wider and more efficient coverage of the world's biological literature. In an effort to provide biologists with a truly comprehensive abstract coverage of biology, the trustees of *Biological Abstracts* have adopted the following general principles of cooperation on biological abstracting as the basis on which they are prepared to cooperate with any and all abstracting and indexing services.

1) *Introduction*: (i) There is great need for more efficient abstract coverage of world biological literature. (ii) Certain areas of the literature of biology are well covered, but others are relatively untouched. (iii) Conservation of the time and efforts of biologists makes it imperative to devise ways to avoid duplication in abstracting services. (iv) An abstract is considered to be a greatly condensed version of an original research paper.

2) *Parties to any agreement*: (i) Biological Abstracts, Inc., would welcome the opportunity to negotiate specific bilateral agreements with any abstracting service under the broad terms of this instrument. (ii) These principles are so phrased that any abstracting service or association of scientists may cooperate. (iii) Indexing services are also invited to cooperate.

3) *Clear indication of areas of core coverage by a cooperating service*: (i) A hard core of journals which a cooperating service proposes to abstract as completely as possible should be made known in advance. (ii) Duplication of the abstracting of core journals should be avoided by each service, when possible. (iii) Service in a given country should give first consideration to adequate coverage of the major journals of its own country. Ease of access, speed of getting journal to abstractor, page proof, and language are factors that determine journal coverage. (iv) Services with limited subject interests could also participate by indicating the journals they would cover completely.

4) *Selective abstracting*: (i) To provide broad coverage, a cooperating service may, in addition to its core coverage, publish abstracts selected with reference to subject matter as well as geographic and linguistic representation. (ii) Selective abstracting may be done by staff and/or voluntary abstractors. (iii) Selective abstracting may also be accomplished by use of abstracts prepared by other services and reprinted under bilateral agreements.

5) *Permission to use abstracts of other services*: (i) By mutual agreement one service may use the abstracts prepared and published by another service, provided that credit for the source is given with each abstract. (ii) Percentage or number of abstracts so used would be

specified in the agreement in order to insure that each service would be a substantial producer of new abstracts. (iii) Initially the percentage of abstracts used under reprint privileges should be a relatively small portion of the abstracts prepared by a cooperating service in order to protect the small specialized service from unfair competition. (iv) Selective reprinting would permit a cooperating service to include or exclude abstracts according to its own standards.

6) *Promotion of wider international cooperation*: (i) Greater international cooperation should be sought through appropriate international organizations. (ii) Wide publicity should be given to the availability of cooperation under the foregoing terms. (iii) The ICSU (International Council of Scientific Unions) Abstracting Board, which is promoting successful international cooperation in physics abstracting and is beginning to expand its services to chemistry, should be encouraged by UNESCO (United Nations Educational, Scientific, and Cultural Organization) to include biology in its scope. (iv) Cooperation in the abstracting of biology in medicine should be stimulated through CIOMS (Council for International Organizations of Medical Sciences) and WHO (World Health Organization). (v) Similarly, in agriculture the services of FAO (Food and Agriculture Organization) should be solicited. (vi) As opportunities develop, negotiations looking toward further integration of comparable services will be explored.

### News Briefs

■ D. B. Carlisle and C. G. Butler have reported [*Nature*, 177, 276 (1956)] that the "queen substance" of honey bees that normally inhibits ovarian development in worker bees would also inhibit ovarian development when injected into prawns from which the eyestalks had been removed. In prawns the sinus glands of the eyestalks contain a hormone that inhibits ovarian development during a part of the year. When eyestalks are removed from prawns with regressed ovaries, the ovaries grow rapidly. Thus, the alcohol extract of a queen bee has the same inhibitory effect as the eyestalk hormone.

In a reciprocal experiment, sinus glands were dispersed in a Potter homogenizer in 67-percent sucrose syrup. This was added to a pollen-candy mixture and fed to newly emerged bees; the control group was fed a pollen-candy mixture without any sinus gland additive. There was a highly significant inhibition of ovarian growth in the experimental group of bees after 19 days of such feeding.

The substances appear to be "the same or related compounds, possibly steroids." They are both stable to heat and acids, less stable in alkali, and soluble in alcohol and acetone.—G. DuS.

■ A comprehensive 20-year study of the seed plants and ferns of the southeastern United States is under way at Harvard University under the direction of C. E. Wood, Jr., of the Arnold Arboretum and Reed C. Rollins, director of the Gray Herbarium. The massive project, which will cover the plants of Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, and Tennessee, has the cooperation of botanists in several southern universities.

The project was first proposed and is supported by George R. Cooley, a retired Albany, New York, investment banker, who has devoted recent years to a study of the southern flora. The project also has financial support from the National Science Foundation. Present knowledge of the 1,000-mile-square area is based largely on a study made 35 years ago.

The new work will codify, illustrate, and describe the nature and geographical distribution of each plant group. Two volumes will treat ferns and seed plants that are not cultivated; a third volume will treat the cultivated plants. The plant names will be based on the International Code of Botanical Nomenclature.

■ A modified set of equations for his generalized theory of relativity, completed by Albert Einstein a few months before his death, has been published by the Princeton University Press as an appendix to the fifth edition of Einstein's book, *The Meaning of Relativity*. Much of Einstein's thought was a search for a unified and pure field theory—that is, a theory embracing the laws of electromagnetism and gravitation and excluding singularities. In the new edition Einstein wrote: "In my opinion, the theory presented here is the logically simplest relativistic field theory which is at all possible." However, he immediately adds, in effect, that whether the equations are more than a formal exercise is still an open question.

■ The Spanish government has ordered a 3000-kilowatt research reactor. The reactor, which is to be built by the General Electric Company, will use fuel enriched to 20-percent in uranium-235. The reactor is of the submerged or swimming pool type.

■ The Joint Committee on Atomic Energy has concluded a 2-day seminar in executive session on the problem of indemnification against reactor hazard. Representatives of the AEC joined atomic manufacturing, operating, and in-

surance interests in an exchange of views on the problems of providing adequate indemnification for reactor owners and manufacturers. Sen. Clinton P. Anderson (D., N.M.) stated that committee action with a view to solving any present problems would begin soon.

■ The National Park Service has found it necessary to reduce the northern elk herd in Yellowstone National Park by about 7000 head since December 1955. Of these, 6500 were killed by hunters and park rangers, and 650 were trapped and shipped to ranges in New Mexico and Montana. The population had reached 12,000, although the carrying capacity of the range is only about 5000.

### Scientists in the News

WILLIAM R. HAWTHORNE, Jerome Clarke Hunsaker professor of aeronautical engineering at Massachusetts Institute of Technology, is giving this year's Minta Martin lecture in aeronautical centers throughout the country. The lecture series is supported by a special gift from the late Glenn L. Martin and, together with the professorship, is in honor of Hunsaker, a leading figure in aviation. The first lecture was given 21 Mar. at the University of Maryland under the auspices of M.I.T., the University of Maryland, and the Washington Section of the Institute of Aeronautical Science.

VIRGIL E. GOODWIN has been named manager of the Birmingham, Ala., branch of Central Scientific Company. Goodwin has had 9 years of experience in the industrial laboratory supply field.

ARTHUR H. COMPTON, physicist, formerly chancellor and now distinguished service professor of natural philosophy at Washington University, St. Louis, is giving a series of five lectures at Michigan State University on the following subjects: "Science and human goals," 5 Apr.; "Freedom and interdependence," 17 Apr.; "Economic potential and world population," 1 May; "Tensions and obsolescence of war," 15 May; and "How can freedom win?" 29 May.

G. PONTECORVO, professor of genetics in the University of Glasgow, has taken up residence as visiting professor of zoology in Columbia University for the spring term. During April he is delivering the Jesup lectures in the department of zoology. The general title of the lectures is "Present trends in genetic analysis." The first two lectures were given on 3 and 5 Apr. Others will follow on 10, 12, 24, and 26 Apr.

JAMES B. MACELWANE was recently given the Jackling award of the American Institute of Mining Engineers, posthumously. He was cited "For his outstanding work in geophysics, geophysical engineering, as a teacher; and for his lecture [the Jackling lecture, which he was preparing during his final illness], 'The earth sciences in the program of the International Geophysical Year, 1957-1958.'"

JAMES J. WARING of the Colorado Foundation for Research in Tuberculosis will give the first J. Burns Amberson lecture on 22 May, during the annual meetings of the National Tuberculosis Association and the American Trudeau Society in New York. The lecture is named in honor of Amberson; recently retired head of the chest service of Bellevue Hospital, New York, and professor of medicine, College of Physicians and Surgeons, Columbia University.

NIKOLAAS TINBERGEN of the University of Oxford is Walker-Ames professor of zoology for the spring term at the University of Washington, Seattle. He is presenting a series of lectures and conducting field observations on the behavior of some local animals.

WALTER B. SHELLEY, associate professor of dermatology at the University of Pennsylvania School of Medicine, gave the 1956 annual Sigmund Pollitzer lecture at New York University Postgraduate Medical School. He talked on "Recent studies on the physiology and biochemistry of itching."

C. D. W. THORNTON will head the activities in atomic energy of the Farnsworth Electronics Company of Fort Wayne, Ind., a division of International Telephone and Telegraph. Thornton comes from the Atomic Energy Commission at Washington, where he was director of the general manager's office of operations analysis and planning.

ROBERT F. INGER, curator of amphibians and reptiles at the Chicago Natural History Museum, will spend six months in the tropical rain forest of North Borneo, where he will collect and observe reptiles, amphibians, and fishes in an effort to achieve a better understanding of the rain forest environment. He will also establish a small weather station.

VERNON BRYSON has been appointed associate director and professor of the Institute of Microbiology, Rutgers University, effective 1 July. Bryson is program director of the Genetic and Developmental Biology Section of the National Science Foundation.