political backgrounds of distinguished scientists before inviting them to the campus. The late J. B. S. Haldane, a world-renowned geneticist and statistician, was invited to speak in 1963, but because he had once written for the London *Daily Worker* the university felt compelled to ask him if he were a Communist. Haldane indignantly refused to answer and substituted appearances at two other leading universities on the dates he would have visited U.N.C. He later said he was not, and had never been, a member of the Communist Party.

Faculty members disturbed by the Haldane incident included those in the department of statistics. George E. Nicholson, the chairman, wondered how many more such incidents it would take to wreck his department. "If you cannot exchange scientific information freely you are not going to be able to retain your people," he told *Science* last month. The incident was on Nicholson's mind early this past summer when the question arose as to whether, under the speaker ban, it would be permissible to invite to the campus V. V. Petrov of Leningrad State University, who has done important work in probability theory.

Russian Invited

Nicholson decided that, if at all possible, he would bring Petrov to U.N.C., ban or no ban. "We have a classified contract here, so I checked with the security office in the Pentagon," he said. "I was told that Petrov was not known to be a member of the Communist Party." Petrov was invited, and duly appeared. "This [episode] was degrading to me," Nicholson observed. "This is a dignified department, not one where you go through such contortions. This is the kind of thing that happens in Russia."

The evidence against the speaker ban is so massive that the study commission would seem to have little choice except to recommend the ban's repeal. The commission is expected to propose an amendment restoring to the U.N.C. trustees the ultimate authority to decide who shall speak at the university; such an amendment might contain cautionary language to encourage close university supervision of any occasions on which Communist speakers appear.

Newspaper polls have indicated that such a proposal would be favored by a majority of the members of the Assembly. A possible complication, however, is a pending legislative reapportionment suit, scheduled for a hearing in federal court on 24 November. University officials hope that by then the General Assembly will have met in special session and abolished the speaker ban. If the Assembly does not act before the court rules on reapportionment, it is conceivable, though perhaps unlikely, that no action on the speaker ban would be permitted until after the state is redistricted and the legislators have stood for reelection.

Another word of caution may be in order, however. Some legislators say that the wave of protests across the country against the Vietnam war reinforces their argument for the speaker ban. Chapel Hill has been quiet during the demonstrations, but 18 members of the university's Student Peace Union recently were escorted off the reservation at Fort Bragg. This minor incident received little public notice, but something noisier and more dramatic could produce a reaction hurtful to the cause of speaker-ban repeal.

Perhaps the worst thing that could happen would be paralysis of the Assembly through a combination of latent fears and unfavorable circumstances. In such a situation, a proposal to submit the speaker-ban issue to a popular referendum could gain favor. Although some legislators have talked of a referendum, no sign of a concerted effort in this direction has appeared.

To soften opposition to speaker-ban repeal, President Friday has indicated that the university is willing to adopt a policy encouraging its chancellors, at their discretion, to require (i) that a senior faculty member preside over a meeting; (ii) that the speaker be subject to questioning by the audience; and (iii) that opposing viewpoints be presented by other speakers, at the same meeting or later.

But the speaker ban poses a fundamental issue difficult to compromise. According to Friday, any proposal to shift the responsibility for banning speakers from the legislature to the U.N.C. trustees or administrative officials will be opposed. Thus far, all groups within the university—students, faculty, administrators, and trustees—have stood solidly against the speaker ban. University officials are aware that this unanimity could be shattered if they, replacing the legislators, became the censor. The speaker ban imposed years ago by the trustees at Ohio State University, and only recently removed, had O.S.U. wracked by dissension.

Failure to eliminate the speaker ban could result in organized student protests by the end of the year. Students are highly conscious of the ban. The petitioners now demanding a recall election for the student government's president, who was reprimanded by a student judiciary council last summer for having taken a girl into a closed fraternity house, denounce him for embarrassing the university at a time of crisis. He, in turn, tells of plans to have student speakers go out into the state and talk against the ban. He says he has restrained some students eager to demonstrate.

Students have been seriously discussing the possibility of bringing a test case against the ban in federal court. The law, which proscribes speeches by persons who have pleaded the Fifth Amendment in loyalty investigations as well as "known communists," is considered of the most dubious constitutionality. But a court ruling against the speaker ban could leave the General Assembly and the university at loggerheads. For that reason, U.N.C. officials regard legal action as a poor alternative to repeal by the legislature.

The ban was established by a hasty political act that stirred controversy and produced an unforeseen crisis. Believing that political actions are best undone by politicians, the university looks to the legislators to remove the speaker ban and resolve the crisis they created.—LUTHER J. CARTER

Regional Pacts: Cooperation Flourishes in Higher Education

There was a time when American colleges and universities jealously guarded their autonomy and shunned any suggestion that they might benefit by sharing facilities, faculty, or programs. But by the 1920's, financial considerations began to impinge seriously upon this desire for independence. Demands for extending and improving the quality and scope of instruction drew attention to the importance of economy, and cooperation among institutions was seen as the most readily available means of meeting these objectives. Before that, informal conferences of administrators had been taking place for many years, but the representative college presidents had never been especially anxious to put collective efforts before independent interests. Some informal,

and not too successful, cooperative agreements had been tried, but it was increasingly felt that more effective arrangements were necessary. As a result, the trend toward cooperation began to quicken in the 1920's, and by the mid-1930's something like 115 cooperative arrangements had been made among over 200 educational institutions.

Since World War II the trend has sharply accelerated as a result of the enormous growth in enrollments, rising costs, and the government's insistence on institutional sharing of costly federally financed research facilities, such as high-energy accelerators.

Two New Associations

In science education, as in other areas, the trend toward cooperative arrangements now seems to be moving more rapidly than ever. Many of the already existing programs are expanding, and new agreements are being signed. In August alone, for example, associations were formed at opposite ends of the country to advance the cause of science study and research. In Texas, seven private institutions combined resources to form the Association for Graduate Education and Research of Northern Texas (TAGER). It was chartered by Southern Methodist University, Texas Christian University, and the Graduate Research Center of the Southwest; the other participants are Austin College, Bishop College, Texas Wesleyan, and the University of Dallas. Other institutions, including state-supported ones, may join later.

TAGER, according to its founders, was organized because few doctoral degrees are awarded by institutions in the six counties that comprise the Dallas-Fort Worth metropolitan areas, although the economy of the region is increasingly dependent on what has been referred to as "science-based industry." Only S.M.U. and T.C.U. offer doctoral programs; the Graduate Research Center, although it does not confer degrees, has extensive research facilities and offers postdoctoral research opportunities. Under a 6-year plan, TAGER will sponsor doctoral and postdoctoral programs in biology, chemistry, engineering, geoscience, mathematics, and physics. In addition, there will be graduate-level courses, conferences, and seminar series aimed at helping scientists in industry keep up with developments in their fields. The association is to be governed by a 30-member board of trustees, chaired by Cecil Green, vice president and member of the board of Texas Instruments; the other members are yet to be named. The estimated cost for operating TAGER for the first 6 years is $14.2 million.

New graduate courses are already under way at some of the member schools, and plans call for academic programs to be initiated on a limited scale next fall, with the first doctorates to be conferred in 1969.

In the Midwest the new addition to the growing number of cooperative associations is Central States Universities, Inc. (C.S.U.), chartered by 12 institutions in five states* which have been trying to expand their graduate science programs. Many of the member institutions began as teachers' schools, but as time passed and conditions changed, they developed a strong desire to compete for recognition as graduate centers. The association is encouraging work in the biological and physical sciences, mathematics, and engineering and is emphasizing nuclear science through its affiliation with nearby Argonne National Laboratory. Already a half-dozen or more faculty members of C.S.U. institutions are at Argonne, taking part in the laboratory's program of Professional Activities for Continuing Education. Under this program faculty members can work at Argonne for a semester or longer, spending part of their time on research and part on other activities, such as lecture series and divisional seminars. The association also has plans for an "honors program" that will allow seniors to spend about one semester at Argonne, dividing their time between research and C.S.U.-sponsored course work.

The administration of C.S.U. is in the hands of a Council, composed of administrators from member schools and chaired by George G. Mallinson, dean of graduate studies at Western Michigan. Its function is to formulate broad policy.

The actual operations of the association are carried out by scientists from the member institutions, who comprise the Board of Directors. The board, headed by Charles A. Randall, Jr., chairman of Ohio University's physics department, is charged with setting up programs to provide greater cooperation among the member universities and between C.S.U. and outside organizations, primarily national laboratories. Funds for running C.S.U. will come from assessment of the members, and from grants and other outside support.

Cooperation on a national level is also evident. More than 30 presidents of major universities, meeting last summer at the National Academy of Sciences, established the Universities Research Association, Inc., which will offer its services to the federal government as manager of a proposed high-energy proton accelerator (*Science*, 18 June). The group will serve as a "Council of Presidents," each member institution being represented by its chief executive. Its operations will be managed by a board of trustees, composed of six members-at-large and 15 members elected from individuals nominated by the member institutions. The Council's first meeting is scheduled for 7 November.

Prospects of Federal Support

If colleges and universities are increasingly enthusiastic over the trend toward cooperation, the federal government seems equally so. The Elementary and Secondary Education Act, passed last spring, authorizes, among other things, the appropriation of $100 million over a 5-year period for research and construction of regional research facilities, which would "be of particular value to the Nation or a region thereof." The grants would encompass facilities for "research, research training, surveys, or demonstrations in the field of education, or the dissemination of information derived therefrom, or all of such activities, including (but without limitation) experimental schools."

And the Higher Education Act, passed last week, offers similar incentives for cooperative arrangements.

The cooperative efforts solve some problems, but often they create others, especially when the time comes to decide which school will keep or scuttle which departments. After all, what department chairman likes to be told that his bailiwick is going to be done away with because someone else on another campus has a better (or more conveniently located) department? Then there are the added financial burdens on each school of extra bookkeeping, transfer of student records, and distribution of funds. And travel of students

* The member institutions are Western Michigan, Kalamazoo; Northern Michigan, Marquette; John Carroll, Cleveland, Ohio; Bowling Green, Bowling Green, Ohio; Kent State, Kent, Ohio; Miami, Oxford, Ohio; Toledo, Toledo, Ohio; DePauw, Greencastle, Indiana; Northern Illinois, DeKalb; Southern Illinois, Carbondale; Ohio University, Athens; and the State College of Iowa, Cedar Falls.

or faculty between schools adds to the financial problem, although, especially in the case of students, the schools seldom assume the travel expenses.

However, the fear of losing autonomy, which at first was a major deterrent to the cooperative movement, seems to be disappearing, since schools retain authority over their own programs. Government of the associations is by representatives of the member institutions, who can approve or veto propositions, as suits their needs. In some cases autonomy is even increased, since each member has the opportunity to develop or improve its own areas of special interest.

The problems are inevitable, but not insoluble. And cooperation is becoming so popular that the Association of American Colleges is offering to help schools in that direction by acting as a clearinghouse to put interested administrators in touch with each other. Administrators who want to form or join a cooperative, especially for program planning or for special activities, are invited to contact the Association of American Colleges. The address is 1818 R Street, NW, Washington, D.C.

—MARION ZEIGER

Announcements

Required 6 months' public notice is given of possible use of plenary powers by the International Commission on **Zoological Nomenclature** in connection with the following names, listed by Case Number (see *Bull. Zool. Nomenclat.* **22**, pt. 3, 13 August 1965):

1647 Validation of *Cacatua* Vieillot (Aves).
1697 Type-species for *Anthanassa* Scudder (Insecta, Lepidoptera).
1698 Suppression of *Aphelenchus steueri* Stefánski (Nematoda).
1699 Validation of *Amblema* Rafinesque (Lamellibranchiata).
1700 Suppression of *Voluta pertusa* L., *V. morio* L., *V. ruffina* L., and *Bulla conoidea* L., (Gastropoda).
1701 Validation of *Vespertilio yamanensis* H. Allen (Mammalia).
1702 Suppression of *Trichogonia* Rossmaessler (Lamellibranchiata).

Comments should be sent in duplicate, citing case number, to the Secretary, International Commission on Zoological Nomenclature, British Museum (Natural History), Cromwell Road, London S.W.7, England. Those received early will be published in the *Bulletin of Zoological Nomenclature.*

A National Center for **Earthquake Research** has been created within the U.S. Geological Survey, for research on the causes and prediction of quakes and on methods of minimizing losses from them. The center was established in response to a report released last month by the White House office of Science and Technology, which recommended a 10-year program of earthquake research. Headquarters will be at the Survey's West Coast office in Menlo Park, California. NCER will be headed by L. C. Pakiser, former chief of the crustal studies branch, which is being moved from Denver to Menlo Park.

Congress has appropriated $2 million for the first year's operation of a **National Clearinghouse on Smoking and Health**, established by the Public Health Service. Daniel Horn, who directed the first government studies in behavioral aspects of smoking, will direct the new unit. The clearinghouse will continue current behavioral research on the problem, undertake additional studies, and collect and distribute available materials on smoking and health.

The National Institute of Allergy and Infectious Diseases has initiated new **reporting procedures for research contractors**. Starting with the September 1965 semiannual reports, all research contract reports will be sent to the Clearinghouse for Federal Scientific and Technical Information, which will make them available to the public. The new procedure will be reviewed after a year to determine the extent of improvement in scientific communication, particularly in reporting of negative results. Inquiries should be sent to the Clearinghouse, U.S. Department of Commerce, Springfield, Virginia 22151.

Grants, Fellowships, and Awards

Half-time assistantships and fulltime associateships in **research on teaching** are being offered at Stanford University. The program will provide research on variables in teacher education and effectiveness. Applicants for the assistantships must be admitted to the graduate division of Stanford's school of education. The stipends are $300 a month and waiver of half the tuition. Research associateships require a doctorate in education, psychology, or sociology. The pay is about $12,000 plus a relocation allowance. (R. N. Bush, Stanford Center for Research and Development in Teaching, 770 Welch Road, Palo Alto, California)

Applications for grants to cover plane fare to the international congress for **microbiology**, 24–29 July, in Moscow, are available from the American Society for Microbiology. A limited number of awards will be made, and preference will be given to persons participating in the congress. Membership in ASM is not required. Deadline for receipt of applications: *1 December.* (R. W. Sarber ASM, 115 Huron View Blvd., Ann Arbor, Michigan.

Scientists in the News

P. Roy Vagelos, head of the section on comparative biochemistry in the National Heart Institute's laboratory of biochemistry, will become head of the department of biochemistry at Washington University medical school, effective next 1 July. He will succeed **Carl F. Cori**, who has headed the department since 1947. Cori will retire from the chairmanship, but will continue his research at the school.

Maurice Bender, formerly chief of the research and training grants branch in the PHS division of air pollution, has become assistant director of the air pollution research center at the University of California, Riverside.

A. Raymond Cellura, formerly at Washington University, St. Louis, has become chairman of the department of human development at the University of Massachusetts.

The recently appointed president of Auburn University is **Harry Melvin Philpott**, former vice president of the University of Florida; he succeeds **Ralph Brown Draughon**, who has retired.

Irena Z. Roberts, professor of chemistry at Trinity College, Washington, D.C., has been appointed chairman of the department.

Erratum: In the report "Soudan formation: organic extracts of early Precambrian rocks" by W. G. Meinschein (29 October, p. 601), Figs. 3 and 4 were interchanged. The figure labeled "3" should have been labeled "4," and the figure labeled "4" should have been labeled "3."