9. What rules shall be enacted concerning the discipline of students and who shall be entrusted with the enforcing of these rules?

10. What provision, if any, shall be made for calling in outside experts to advise in regard to improvements in educational methods, or what facilities shall be given to the professors to travel and study such methods?

The above list is not intended as a complete list, but is merely a suggestion as to the kind of questions that may arise in forming a university government.

The following is suggested as a form of organization which will best secure the desired result:

A board of trustees, the legal corporation, responsible for the financial management and for the enactment of broad legislation as to matters of general policy. It should contain men of wealth and social standing, to give it the prestige that such men can bring; men skilled in business and the law, to look after its invested funds; experienced educators, whose counsel may be valuable on matters of educational policy; representatives of each of the learned professions that has a college in the university; and representatives of the alumni of each college. Such a body of men under a proper system of government will not need to meet oftener than twice a year except in cases of emergency, nor will it need to take any active part in the details of management, but it would establish a set of rules delegating specific powers to another body of men better qualified than the trustees are to exercise them.

Such other body is a university senate or council, and it might be composed of, say, three trustees, who are willing to devote some time to university matters, of the deans of each college, ex-officio, of one professor from each college, elected for a definite period by its faculty, and of one alumnus of each college, not a trustee or holding any other position in the university, elected by the alumni association of each college.

This university council should be granted all powers not especially reserved by the board of trustees, and it may delegate such minor powers as it sees fit to the several deans or faculties.

The president or chancellor of the university should properly be elected by the trustees. He should represent the university on all public occasions. If he is an orator and money-getter, all the better; but whatever he is, it is not wise to give him autocratic power over the faculties nor over the council.

There might be a vice-chancellor, elected by the trustees on nomination of the council. It should be his duty to preside over the council, and to have a general oversight over educational matters, and he therefore should be an experienced educator.

Given two such bodies, each composed of strong men, and they could be trusted to discover the best system of university government and to frame it in a constitution and by-laws. Under such a government strong men could be obtained to fill the professors' chairs; they would be secure in their positions as long as they did their duty, and such a disgraceful proceeding as the one that has just taken place at Syracuse would be impossible.

William Kent

601 Comstock Ave.,
Syracuse, N. Y.,
June 9, 1908

THE INTERNATIONAL CATALOGUE OF SCIENTIFIC LITERATURE

In a paper entitled "Cooperation in Scientific Bibliography" which appeared in Science, April 3, 1908, no mention was made of the work being done by the International Catalogue of Scientific Literature. As the

International Catalogue is undoubtedly the greatest of all cooperative bibliographical enterprises, it would not seem out of place to here briefly outline its present condition, its history having been sufficiently recorded in several papers by Dr. Cyrus Adler published in SCIENCE, August 6, 1897, June 2, 9, 1899, and August 28, 1903.

The first volumes of the International Catalogue dealt with the literature of 1901; since that date seventeen volumes have appeared annually, covering the whole field of science, classified under the following heads, each subject being the title of an annual volume: Mathematics, Mechanics, Physics, Chemistry, Astronomy, Meteorology (including Terrestrial Magnetism), Mineralogy (including Petrology and Crystallography), Geology, Geography (Mathematical and Physical), Paleontology, General Biology, Botany, Zoology, Anatomy, Anthropology, Physiology (including Experimental Psychology, Pharmacology and Experimental Pathology) and Bacteriology.

The aim of the International Catalogue is not only to cite the title of each scientific paper published since January 1, 1901; but to briefly supply an analytical digest of the subject of each paper. This is accomplished by means of classification schedules arranged to include in systematic order each minute subdivision or subject of all of the sciences named above. Not only was it necessary to provide in the schedules for the subjects of all previous scientific activities, but also to make ample and elastic provision for the present trend of scientific thought and investigation, and so far as possible to anticipate future need. It will be seen that such a broad system of classification must, to prevent its becoming unwieldy, be provided with some shorthand method of classifying the subject contents of scientific papers, not only for convenience in preparation, but for convenience in use. This has been successfully accomplished in the following manner: To each one of the sciences is assigned one of the letters of the alphabet, and to each of the subheadings in these sciences is assigned a number; in classifying the subject contents of any scientific paper instead of writing an abstract of the contents a letter and a number for each important subject treated is added to the citation, thus not only analyzing but classifying the author's work. The printed volumes are arranged first as author catalogues and second as subject catalogues. In the subject catalogues the classified references are assembled and grouped under each of the common heads to which they appertain, furnishing thereby a ready means of learning at a glance all that has been written on a given subject of scientific investigation. It will be seen that it is necessary for each paper to be examined by some one competent to appreciate its contents and note the salient points and principal subjects by means of the combined alphabetical and numerical method noted above.

The International Catalogue of Scientific Literature is more than an index, it is a condensed digest of the world's scientific literature.

As the editing and publishing of the International Catalogue is paid for entirely by the funds received from the subscribers, it has been necessary to charge $85 per annum for the complete set of seventeen annual volumes, although this sum has, up to the present time, barely been sufficient for the purpose intended. It is felt that the comparatively high price has greatly limited the sale of the catalogue and therefore limited its general usefulness, although no way can at present be seen to reduce the cost. Should a large endowment at any time be made for this work the general usefulness of the index could be extended by materially reducing the price of the volumes.

The organization of the catalogue is cooperative to the fullest extent; all of the nations of the world taking part in the work through the agencies of regional bureaus established in central locations in all of the principal countries of the world. These bureaus are supported by the countries in which they are established; in no case is any part of the subscription receipts used for their maintenance.

The Smithsonian Institution is and has

been, since the beginning of the undertaking, acting as the regional bureau for the United States and is, through the aid of a small governmental grant, collecting, indexing and classifying the scientific works published in this country. At the present time about thirty thousand classified references are being sent by the Smithsonian Institution each year to the London Central Bureau, and as the small congressional allotment only justifies the employment of a limited force to carry on the work this number represents practically the limit of the output of the bureau as at present constituted. The literature of each year since 1901 is gradually being filled in and when done will constitute a complete and permanent record of scientific work. That no paper of any importance might be omitted a most systematic routine is carried on of which a complete and permanent record is kept. For the regularly appearing periodicals a list of titles is kept and as soon as a number or part is indexed records are made of the fact, first under the title of the publication, then in an author's record, together with a complete copy of all data abstracted. By regularly going over these records any omission in a volume or part of a volume is apparent and the omission made good. For collecting books, pamphlets and separately appearing publications a variety of methods are resorted to; all the principal bibliographical lists are consulted, the *Publishers' Weekly* is regularly checked up, as are the following works: The Catalogue of Public Documents, proof sheets of the Library of Congress catalogue cards, the Experiment Station Record and various list of publications, such as those of the Carnegie Institution, the various colleges, the bureaus of the United States government.

The Smithsonian Institution is supposed to receive all scientific periodicals published in this country and its daily mail furnishes a great part of the material indexed. By means of these methods every published paper, coming within the scope of the catalogue, is almost certain at some time to come to the notice of the indexers for the catalogue. As similar or equivalent systems are used in the other regional bureaus in dealing with foreign scientific literature, it would appear difficult for any paper worthy of notice to escape this international drag-net now so systematically used to provide for the needs of the modern scientific investigator.

Leonard C. Gunnell,
Smithsonian Institution,
Washington, D. C.,
June 11, 1908

The Indian Institute of Science[1]

After negotiations and preparations extending over several years, the Indian Institute of Science is about to come into existence. Intelligence received by the last Indian mail states that Lord Minto, as patron of the institute, has appointed a provisional committee to conduct its affairs until the properties with which the institute is endowed can be vested in the constituted authorities. The committee has already met, and the construction of the institute buildings is to be commenced at once.

The institute owes its inception to the munificence of the late Mr. Jamsetji Nusserwanji Tata, a Parsi merchant and mill-owner of Bombay, who did much for the development of various Indian industries and started the scheme for the great iron and steel works now in course of erection at Sini. He wished to encourage the pursuit of science among young Indians, with special reference to the utilization of the country's resources, and thought the best plan would be the establishment of a large and well-equipped institution for post-graduate work. To this end he decided to allot a considerable portion of his ample fortune, in the shape of property at first calculated to produce Rs.125,000 (about £8,333) annually, though it is believed to have since appreciated in value. Unexpected difficulties were, however, experienced at the outset. Institutions of the kind in various parts of the world were first studied by special representatives, and it was sought to adapt their principal features to Indian requirements. Then the selection of a suitable site was a matter that took years

[1] From the London *Times*.