

son, whether a subscriber or not, could receive the information for 3 fr. 10 (2s. 6d. or 62 cents). Surely no comment is necessary to prove the value of the work nor the extreme cheapness of the service.

The gradual success of the work from a scientific standpoint has led to a corresponding improvement of the financial status of the work. For the first three experimental years there was an average annual deficit uncovered by the subsidies of Frs. 5625, while for the last year this deficit had fallen to Frs. 224.

All this has now induced the Swiss Government to take a step which decided the entire future of the enterprise. By a recent vote of parliament its subsidy is increased fivefold, and arrangements are being made to give the work permanence by making it independent of the person of the present director.

In the past year great progress has been made towards bringing the bibliography up to date. For certain departments it is already the most complete bibliography in existence. At present the malacological department, which had been far behind, is being brought up to the standard of excellence maintained by the whole. Later, attention will be given to protozoa and worms, especially as regards notes contained in medical journals, and finally ornithology will follow.

The anatomical bibliography has recently received renewed attention. Indeed the number of titles is more than double that issued in the previous year and yet they form but a small part of the extensive manuscript now ready for publication. The publication of the physiological bibliography, on the other hand, has been suspended and can not be resumed for two or three months, in consequence of technical difficulties which can only be overcome by the purchase of new machinery. This unfortunately can not yet be obtained from the factory. In the meantime a complete set of guide-cards has been published.

The Concilium owns a manuscript card catalogue of new genera and species (including new names) which are recorded as soon as published. From 1901 on, copies of any part of this catalogue may be obtained at the uniform charge of 10 centimes per entry (minimum 50 centimes). Since the cards are arranged faun-

istically as well as systematically, most diversified orders can now be received, *e. g.* : New genera and species of trichoptera, of bombycids, etc., new genera and species described from the Cape Colony, from the Philippines, from Texas, from Perthshire, etc., new reptiles from Japan, or simply new species of *Carabus* or any other genus.

The usefulness of a card catalogue depends largely on its being properly mounted and supplied with guide-cards. The sets of guide-cards issued in previous years are described in a special circular. A description of the new card cabinets of the Concilium is also the object of a special pamphlet. American subscribers would find it, however, more profitable to turn to the well-known Library Bureau.

The cards thus far published have been taken from no less than 1,576 periodicals. A list of journals showing precisely what volumes and numbers have been excerpted is in preparation and will, it is hoped, soon be issued. Experiments are being tried with a view to opening new facilities of subscription in regard to the great faunistic areas. But above all, our program for 1901 is to render the references more complete and to approach more nearly our final aim, which is to *remove the entire burden of bibliographical research from the shoulders of the working biologist*.

In closing, we wish to thank especially the Swiss Government and the Elizabeth Thompson Science Fund for their generous support in the past, without which none of this work could have been carried on.

SCIENTIFIC NOTES AND NEWS.

DR. H. A. ROWLAND, professor of physics in the Johns Hopkins University, died suddenly on April 16th.

PROFESSOR J. WILLARD GIBBS, of Yale University, has been elected an honorary member of the London Physical Society.

THE University of St. Andrews conferred its LL.D. on Mr. Alexander Agassiz, of Harvard University, in April. Mr. Agassiz returned from his visit abroad last week.

THE Board of Visitors to the U. S. Naval Observatory held its first meeting at Washing-

ton last week, with all the members in attendance. Professor Young, of Princeton University, was elected Chairman and Professor Stone, of the University of Virginia, Secretary. The members of the Board were received by President McKinley. They visited the observatory, and held a number of sessions, but the proceedings have not been made public.

At the last meeting of the Rumford Committee of the American Academy of Arts and Sciences a grant of \$300 was awarded to Professor Arthur A. Noyes in aid of a research on the effect of high temperatures upon the relative conductivity of aqueous salt solutions.

DR. W. KARAWAIEW has been appointed director of the zoological station at Sebastapol.

THE Washington Academy of Sciences has announced for Wednesday, April 17th, at 8:15 P. M., a lecture in honor of the National Academy of Sciences by Professor Alpheus Hyatt on 'A New Law of Evolution.'

THE spring lectures before the Royal Institute, London, include: Dr. Allen Macfadyen, six lectures on 'Cellular Physiology,' with special reference to the enzymes and ferments; Professor Dewar, three lectures on the 'Chemistry of Carbon'; Professor J. B. Farmer, two lectures on the 'Biological Characters of Epiphytic Plants,' and Mr. J. Y. Buchanan, three lectures on 'Climate, its Causes and Effects.' The Friday evening meetings will be resumed on April 19th, when a discourse will be delivered by Professor J. J. Thomson, on the 'Existence of Bodies Smaller than Atoms.'

As we have already announced, Mr. J. H. H. Teall has succeeded Sir Archibald Geikie as director-general of the British Geological Survey. *Nature* now announces the following further changes in the staff: Mr. H. B. Woodward to be assistant director (for England and Wales), and Mr. John Horne to be assistant director (for Scotland); Mr. C. Fox Strangways, Mr. Clement Reid and Mr. Aubrey Strahan to be district geologists for England and Wales; Mr. B. N. Peach and Mr. W. Gunn to be district geologists for Scotland, and Mr. G. W. Lamplugh to be district geologist for Ireland.

PROFESSOR RUDOLPH VIRCHOW will be eighty years old on the 13th of October. When he celebrated his seventieth birthday, a fund was collected in his honor for the endowment of scientific research, and a committee has now been appointed to increase this fund as a further testimonial to Germany's greatest living man of science. It is intended that the testimonial shall be international, and a committee has been appointed in America consisting of Charles A. L. Reed, President of the American Medical Association; Henry P. Bowditch, President of the Congress of American Physicians and Surgeons; William H. Welch, Johns Hopkins University; Robert F. Weir, President of the New York Academy of Medicine; A. Jacobi, 110 West 34th Street. To Dr. Jacobi, who is secretary of the committee, subscriptions may be sent.

THE Geographical Society of Leipzig has made the first award of its Edward Vogel gold medal to Professor Schweinfurth, of Berlin. The Society has elected as honorary members: Professor Penck, of Vienna; Professor von den Steiner, of Berlin, and Dr. Alph-Stuebel, of Dresden.

KING EDWARD has consented to become patron of the Royal Institution, London.

PROFESSOR BRANNER, of the University of California, has sent us an extract from the *Southern Cross*, a newspaper published at Buenos Ayres, which gives a description of the unveiling of a monument in honor of the geologist, Burmeister, lately director of the National Museum in Calle, Peru. The monument is the work of the German sculptor, Aigner, and was erected by public subscription at a cost of \$12,000. The statue, which is of marble on a large pedestal, represents Burmeister seated, holding a mineralogical specimen in his right hand. Commemorative addresses were made by the minister of public instruction and others.

WE record with much regret the death of Dr. William Jay Youmans, which occurred on April 10th, at Mt. Vernon, at the age of sixty-two years. Dr. Youmans, after a thorough education in science and medicine, joined his brother in the establishment of the *Popular Science Monthly* in 1872, and was editor-in-chief

of that journal after the death of his brother in 1887, until last year. In the editorship of the *Monthly* and in many other directions Dr. Youmans did much for the diffusion and advancement of science in America.

WE also regret to record the death of Professor John Thomas Duffield, for more than forty years professor of mathematics in Princeton University. He was born in Pennsylvania in 1823, and graduated from Princeton College in 1841, where he was first appointed tutor in Greek and in 1847 adjunct professor of mathematics. Dr. Duffield was the author of various publications on religious and mathematical subjects.

MR. ARTHUR COPPEN JONES died, at Davos, on March 8th, at the age of thirty-five years. Mr. Jones studied under Huxley at the Royal School of Mines, but was compelled to go to the Engadine when only 20 years old, owing to an attack of tuberculosis. When his health improved, he studied bacteriology and was the author of a paper advocating the view that the tubercle bacillus is a fungus. He translated Fischer's 'Structure and Function of Bacteria,' recently issued from the Clarendon Press.

DR. FRANZ MELDE, professor of physics in the University at Marburg, died on March 16th at the age of sixty-eight years.

MRS. EMMA FLOWER TAYLOR, daughter of the late Roswell P. Flower, has given \$60,000 to Watertown, N. Y., for a public library in memory of her father.

THE committee, appointed by the International Congress of Geologists on the 25th, of August last, has announced as the subject proposed for the Spendiaroff prize for 1903 'A Critical Review of the Methods of Classification of Rocks' (*Revue critique des méthodes de classification des roches*). The value of the prize is 456 roubles or about \$240. Manuscripts should be addressed to M. Charles Barrois, secrétaire général du Congrès Géologique International, 62, boulevard Saint Michel, Paris. At least two copies of papers submitted in competition are required, and they should be sent, at the latest, a year before the next session of the Congress in 1903.

PROFESSOR TODD writes from Port Said on

March 25th, stating that the expedition sent from Amherst College under his direction to observe the eclipse of the sun in the Dutch East Indies, has reached that point two days ahead of his ephemeris and should be in Singapore on or before April 15th. The station for this observation of the eclipse is likely to be the little island of Sinkop, one of the lesser dependencies of the Sultan of Rhiow, about a day's journey southeast of Singapore. In addition to Professor Todd's apparatus for photographing the corona, which is partly automatic, Dr. Wright, of Yale, has provided an equipment of apparatus for determining the photographic polarization of the corona.

AN expedition to Samoa and the Pacific Islands for the study of mosquitoes in relation to the diseases which they bear has been planned at the instance of Dr. Patrick Manson. The sum of \$5,000 has been subscribed anonymously and it is hoped that the British Government will assist. The *Lancet* states that here the investigators would set themselves to study the local mosquito, and, having obtained full knowledge of its habits, they would proceed to investigate the mosquitoes of an island in which malaria is endemic. They are then to convey the *anopheles* from the malarial to the non-malarial island and to endeavor there to breed the *anopheles* under laboratory conditions. In the aquarium thus formed there would be introduced certain plants and animals which are apparently peculiar to Samoa with the view to discover, in one or another of these, something antagonistic to the *anopheles*. The experiment would then be repeated under conditions as nearly natural as might be possible. Dr. Manson hopes that by this means there may be discovered a something which is hostile to the *anopheles*, and which may be subsequently turned to good account by being introduced into islands and localities where malaria is epidemic. The Pacific islands are suggested by Dr. Manson from the fact that they also afford unique opportunities for the study of filariasis and elephantiasis. In many of the islands this latter disease attacks from 20 to 50 per cent. of the population, and in others filariasis attacks from 30 to 60 per cent. But there are also small islands with populations of

from 200 to 300 in which elephantiasis is alleged not to exist, while there are other islands, equally small in population, where almost every individual is affected.

THE *Princeton Alumni Weekly* states that another geological expedition to the far West is projected for next summer, for the purpose of adding to the very valuable collections already in the university museums, a large part of which have been gathered by this means during the last twenty-five years. Ten or a dozen upper classmen are expected to compose the party, besides Dr. M. S. Farr, '92, the new curator of vertebrate paleontology, who will be in command, since Professor W. B. Scott, '77, who has led so many of these expeditions, expects to be in South America next summer. Southern Montana will be the principal field of exploration, though, after two months of research, the party will have a pleasure trip of two or three weeks in the Yellowstone National Park. Dr. Farr expects to go out to Montana about the middle of May to make the arrangements, the other members of the party following after commencement.

THE American Physical Society will hold its next meeting in New York City, on April 27th. The program committee is Professors J. S. Ames, M. I. Pupin and Ernest Merritt.

THE Secretary of the National Educational Association, Mr. Erwin Shepard, has sent out a notice stating that the arrangements for the fortieth annual convention at Detroit next July are progressing satisfactorily. The hotels have agreed not to advance their rates and accommodations for ten thousand teachers are being secured in private houses. The official program will be issued on May 1st.

THE eighteenth annual meeting of the American Climatological Association will be held at Niagara Falls on May 30th and 31st and June 1st. The program includes a special discussion on the home treatment of tuberculosis.

THE Congrès des Sociétés Savantes held last week its annual conference at Nancy. Various geological and archeological explorations have been arranged to follow the Congress.

THE inaugural meeting of a society for the

study of psychology by experimental methods was held in London on April 16th.

THE Anatomical Society of Great Britain and Ireland will hold its summer meeting at Leeds on July 5th and 6th.

THE spring meeting of the Iron and Steel Institute of Great Britain will be held on Wednesday and Thursday, May 8th and 9th, at the Institution of Civil Engineers, London. The retiring president, Sir William Roberts-Austen, will introduce the president-elect, Mr. William Whitwell, who will deliver an inaugural address. The Bessemer Gold Medal for 1901 will be presented to Mr. J. E. Stead. The autumn meeting of the Institute will be held in Glasgow on September 3d and following days.

THE U. S. Fish Commission will make an elaborate exhibit at the Buffalo Exposition, and this is now being arranged by Mr. W. de C. Ravenel, assistant in charge of the division of Fish Culture. There are to be fifty tanks containing fresh and salt water fishes shown as nearly as possible in their natural surroundings. Hatcheries will be in operation throughout the entire summer. There will also be a full exhibit of methods of fishing and of the products of fisheries, including the secondary products, such as oil, shells, skins, etc.

WE learn from the *British Medical Journal* that the Institute of Tropical Medicine established by the Senate of Hamburg, with the support of the German Empire, will shortly be in working order. It is housed in the Old Seamen's Hospital, Hamburg. The director of the Institute is Dr. Nocht, formerly port medical officer of Hamburg. He did admirable service to Hamburg in the cholera epidemic of 1892. He was formerly a surgeon in the German army, and afterwards worked under Professor Koch in the Institute of Hygiene at Berlin. Dr. Nocht has made original researches on the parasitology of malaria. He will have as his assistant in his new office Dr. Ollwig, who accompanied Professor Koch in his tropical expedition.

A MUSEUM of ethnology has been established at the University at Breslau, through the efforts of Dr. Thilénus, professor of anthropology and ethnology

IN connection with the Munich veterinary school, a station has been established for the study of the diseases of fishes.

PLANS for the lion house of the New York Zoological Park have been approved by the executive committee of the Zoological Society.

SIR JOHN MURRAY, who has just returned from a six months' expedition to Christmas Island, during which he crossed the island from end to end—the first occasion on which it has been traversed—has made a statement with reference to his travels to a representative of Reuter's Agency. Christmas Island, which is situated in the Indian Ocean, is 220 miles from the nearest land, and is some 12 miles long by seven broad. It is covered with dense forest, having an area of nearly 50 miles, and the sea depth around its shores is between three and four miles. There is no good anchorage, but only an open roadstead. When Sir John Murray was on the island there were 13 whites, including a doctor, chemist and engineer, living there with their families, together with 720 Indian coolies engaged in working the rich phosphate deposits. The animals and plants on the island are of extreme interest. The whole place is overrun with curious red crabs as much as 18 inches across. They are excellent tree climbers, and once a year there is a regular migration of these crustaceans, who travel in bodies like ants, taking 15 days on the journey, and returning inland after hatching their eggs. There are only five mammals on the island, including two species of rat not known elsewhere. They are of two colors, those on the plateau being brown, while those nearer the coast are black, and in order to keep them down a number of terriers have been imported. On the island are also to be found a toothless snake and a blind snake much like a worm. In exploring the island Sir John Murray had to cut a track through the dense forest until he reached the central plateau at an altitude of 1,000 feet, where traveling was not so difficult. One night he got lost in the forest, and had to subsist on the tops of sago palms, which he cut down. The island is under the Straits Settlements Government, and a resident magistrate has just been despatched thither from Singapore, together with an official of the

Public Works Department, a scientific commission, and a force of police, 35 in all. They will select sites for the administrative buildings to be erected on the island. The climate is perfect, like a hot English summer, and prior to the British annexation no human being is supposed to have lived on the island.

THE annual general meeting of the Chemical Society was held at Burlington House, London, on March 28th. Professor T. E. Thorpe, the president, made an address in the course of which he said according to the *London Times*, that they were proud to think that the Society, in so far as it had administered to the progress of chemistry, might have contributed in some measure to the luster of the reign which had been eminently associated with the spread of science. They had never been unmindful of what their science owed to the royal family, and in particular to the late Prince Consort. They entered on the 20th century mustering 2,368 members, including 33 foreign members. Since the last anniversary 182 communications had been made to the Society, a number greater than that of any preceding year. The volumes published in 1900 by the Society contained 3,758 abstracts of papers, which had appeared mainly in continental journals. For some time past their sister society in Berlin had had under consideration the desirability of establishing, with the cooperation of the various chemical societies in Europe and America, a uniform system of atomic weights. The committee appointed by the Society had decided to recommend that $O = 16$ be taken as the basis of calculation of atomic weights, and that in assigning a number as the atomic weight of any element only so many figures should be employed that the weight might be regarded as accurately known to one unit in that figure. Some discussion had taken place with regard to the time of the Society's meetings, and the council had decided provisionally to hold the meetings during the coming session at 5:30 P. M. on the first and third Wednesdays of the month. Professor Reynolds J. Emerson was elected president for the ensuing year.

A DESPATCH from New Orleans to the daily papers states that the investigation made by Professor Beyer for the American Ornithologi-

cal Association of the Louisiana Gulf Coast for the purpose of stationing wardens to protect the sea birds shows that action was not taken a moment too soon. Professor Beyer found that nearly all the breeding places of the birds had been destroyed by killing the birds themselves and taking their eggs. Not a trace of birds was found on either Brush or Caillou islands, at one time the home of millions of sea-fowl. The same was true of Calumet and Castelle islands, on which every living thing had been killed. A few gulls and hens were found left on Timbalier Island, and there are said to be a few on Last Island which, however, could not be visited on account of the severe weather. Wardens were appointed wherever birds were found and the fishermen of the neighborhood promised to cooperate with the wardens in preventing the killing of the birds in the breeding season and the stealing of eggs.

THE report of the British Consul at Naples for the past year, as summarized in the *London Times*, describes the recent progress of the Marine Zoological Station in that city, 'the mother of all similar scientific establishments in the world.' Its progress has continued with undiminished activity, and the number of biologists of all nationalities who have carried out their investigations there has largely increased. During the past two years 63 and 71 scientists respectively have availed themselves of the opportunities of research afforded by it. Among other students at the station there has been a regular succession of naval officers sent by the Italian, Russian, German and Spanish governments for the purpose of undergoing a course of training in the commoner methods employed in capturing, investigating and preserving marine organisms. The work done at the station is for the most part of purely scientific interest, but a great many of the contributions to science are of great and immediate practical value. A report of great scientific and economic value has been prepared by the Cavaliere Lo Bianco, the permanent naturalist attached to the station. It contains the results of many years' assiduous study of the seasons of the year at which the animals, as distinguished from the plants, which inhabit the Bay of Naples, breed.

THE Royal Irish Academy has this year taken a step, says *Nature*, which will, it is hoped, still further establish its position in Ireland, and in the world of sciences and letters in general. It has adopted the principle of the bye-laws of the Royal Society of London, respecting the mode of election of members; the council is now empowered to select a number of persons, not exceeding twelve, in each year, from the list of candidates for membership proposed, and to recommend these to the body of members for election. The members may, at the single annual meeting at which elections now take place, substitute the name of any candidate already proposed for that of any candidate selected by the council; but the number of candidates elected must not be greater than that fixed by the council for that particular year. Changes have been also made in the bye-laws so as to provide for the more frequent introduction of new blood into the council. The position of the Royal Irish Academy becomes at the same time defined in relation to the other great medium of scientific publication and intercourse in Dublin, the Royal Dublin Society. While the latter, by its objects and foundation, must be to a large extent a popular institution, performing its important public functions and scientific work by the support of an extensive body of members, the Royal Irish Academy is able, on the other hand, to maintain its membership as a distinction, and to attract to itself, by this circumstance, those who are mainly concerned with the furtherance of research.

PARTICULARS in regard to the research scholarship founded by Mr. Andrew Carnegie in connection with the Iron and steel Institute of Great Britain, of which association Mr. Carnegie is a vice-president are given in the *London Times*. For this scholarship Mr. Carnegie presented to the institute twenty two \$1,000 Pittsburg, Bessemer and Lake Erie Railroad Company 5-per-cent. debenture bonds, the income derived from which will be applied to awarding annually one or more scholarships of such value as may appear expedient to the council of the institute. The awards will be made on the recommendation of the council irrespectively of sex or nationality. Candidates, however, must be under 35 years

of age, and application must be made on a special form to the secretary of the institute before the end of April in every year. The scholarships will be tenable for one year, but the council will be at liberty to renew them for a further period if thought desirable instead of proceeding to new elections. The object of this scheme of scholarships is not to facilitate ordinary collegiate studies, but to enable students who have passed through a college curriculum, or have been trained in industrial establishments, to conduct researches in the metallurgy of iron and steel and allied subjects, with the view of aiding its advance or its application to industry. It is suggested that the National Physical Laboratory—on the governing body of which the Iron and Steel Institute is represented—would for many reasons be a very suitable establishment in which such a research could be carried out. There is, however, no restriction as to the place of research that may be selected, whether university, technical school, or works, the only absolute condition being that it shall be properly equipped for the prosecution of metallurgical investigations. The results of the researches are to be communicated to the Iron and Steel Institute in the form of a paper to be submitted to the annual general meeting of members. If the paper appears to the council to be sufficiently meritorious the author will be awarded the Andrew Carnegie gold medal. The awarding of the medal in any year, however, will not be obligatory, but will depend upon a paper of sufficient merit being communicated.

IN reply to those who have signed a petition objecting to the opening of the Edinburgh Museum of Science and Art on Sunday afternoons, Lord Balfour has written: "In point of principle I am unable to agree that a visit to a museum is a contravention of any divine law. If a citizen of Edinburgh may not go to a museum, by what right does any one of us enjoy a walk in our own or somebody else's garden? In deciding the practical question, I think we must keep in view the extent of the innocent gratification as well as improvement offered to those whose opportunities for both are otherwise limited. I believe that in these respects the

advantages will be very great as compared with the amount of labor involved. Having regard to this, and bearing in mind the resolution of the House of Commons, I had but little difficulty in coming to the conclusion that it was my duty to decide the question of Sunday opening in the case of the Edinburgh Museum in the way I have done. I did not arrive at that conclusion without careful and anxious consideration, and I cannot hold out any hope that it will be reconsidered unless and until experience of its working in Edinburgh supplies proof that slight use is made of the opportunity offered or that its consequences are in some way detrimental to the public interests."

UNIVERSITY AND EDUCATIONAL NEWS.

By the will of the late Mrs. Josephine L. Newcomb, Tulane University will receive a large sum, said to be \$2,000,000, for the Sophie Newcomb College for Women.

MRS. P. D. ARMOUR and her son Mr. J. Ogden Armour have given \$1,000,000 to the Armour Institute, Chicago. This endowment will be used, it is said, to extend the work of the Institute in the direction of electrical engineering and chemistry.

THE daily papers report that the endowment fund of \$1,000,000 for the Johns Hopkins University has been practically collected and that the donors will be announced on May 1st. It is also said that President Gilman's successor will be announced at that time.

MR. JOHN B. GILFELLAN, of Minneapolis, has given the University \$50,000 for the assistance of poor students.

CREIGHTON UNIVERSITY at Omaha, Nebr., has received \$75,000 from Mr. John A. Creighton for a new building.

THE Board of Regents of the University of Minnesota has approved the recommendation of the faculties abolishing the degrees of bachelor of philosophy and bachelor of science, the degree of bachelor of arts being hereafter given for all liberal studies.

MISS LAURA D. GILL will be installed as Dean of Barnard College on May 1st. A gift of \$5,000 to the College from Mr. Jefferson Seligman has been announced.