stegomyiæ is not an animal parasite. Yeast cells sometimes stimulate the coccidia in form and staining reaction.

The infection of yellow fever is in the blood serum early in the disease. No abnormal elements that bear a causal relation to the disease can be detected in the serum or in the corpuscles with the best lenses at our command.

The infective principle of yellow fever may pass the pores of a Pasteur-Chamberland B filter. Particles of carbon visible with Zeiss lenses pass through both the Berkefeld and Pasteur-Chamberland B filters. Because the virus of an infectious disease passes a Berkefeld or Pasteur-Chamberland B filter it does not necessarily follow that the parasite which passed the filter is 'ultramicroscopic,' or that it may not have elsewhere another phase in its life cycle of large size. The filtration of viruses may succeed or fail, depending upon the character of the filter, the diluting fluid, the pressure, time, temperature, motility of the particles and other factors.

The period of incubation of yellow fever caused by the bites of infected mosquitoes is usually three days, sometimes five days, and in one authentic instance six days and two hours; but when the disease is transmitted by such artificial means as the inoculation of blood or blood serum the period of incubation shows less regularity.

Yellow fever may be conveyed to a non-immune by the bite of an infected *Stegomyia fasciata;* but the bites of *Stegomyia* which have previously (over twelve days) bitten cases of yellow fever do not always convey the disease.

Fomites play no part in the transmission of the disease.

The tertian and estivo-autumnal malarial parasites will not pass the pores of a Berkefeld filter.

There is a poison in the blood during the chill of tertian infection which, when injected into another man, caused chill, fever and sweating. This poison, while present in a case of tertian during the rise of temperature, could not be demonstrated in the blood of a case of estivo-autumnal fever during the decline of the paroxysm. While this poison reproduced the symptoms of the disease, still the data are too limited to consider it the malarial toxin.

Stegomyia fasciata is a domestic insect. It is most active during the day, but will bite at night under artificial light. The female lays eggs at intervals; the maximum number of eggs laid by one insect observed was 101. The mosquito does not always die directly after ovipositing.

Stegomyia fasciata may bite and draw blood from cadavers, although the danger from spreading the infection from this source is remote.

Male and female *Stegomyia fasciata* may pass a screen containing 16 strands, or 15 meshes to the inch, but not one of 20 strands, or 19 meshes to the inch.

Tobacco smoke produced by burning two pounds per 1,000 cubic feet with an exposure of two hours is sufficient to kill *Stegomyia fasciata.* This method is objectionable on account of the yellow stains and disagreeable odor. Pyrethrum burned in the proportion of one pound per 1,000 cubic feet with an exposure of two hours will stupefy *Stegomyia fasciata;* it requires two pounds to kill them outright.

From the limited number of experiments made and from previous experiments it is thought that sulphur dioxid is the best of the gaseous insecticides for this purpose. Formaldehyde gas is not an insecticide, and therefore not applicable.

SCIENTIFIC NOTES AND NEWS.

M. Élie Metchnikoff, of the Institut Pasteur, has been elected a foreign member of the Brussels Academy of Sciences.

. Dr. Karl Schwarzschild, professor of astronomy at Göttingen, has been elected a member of the Academy of Sciences of that city.

Brig. General A. W. Greely, chief signal officer of the army, has completed a thorough inspection of the Alaskan telegraph system.

Dr. Otto Klotz, Dominion astronomer, has just completed observations at Harvard Observatory for the longitude connections with the new observatory at Ottawa.

PROFESSOR PODWYSSOTZKI, dean of the medical faculty of Odessa, has been appointed director of the Institute for Experimental Medicine at St. Petersburg.

DR. HERMAN S. DAVIS, after six years' investigation of the variations of latitude for Columbia University, New York, and five years' for the International Geodetic Association, retires from this line of research on November 1, on which date his resignation as director of the observatory at Gaithersburg, Maryland, takes effect.

THE following members of the advisory board of Panama Canal engineers have sailed for the Isthmus on the steamship *Colon:* Gen. George W. Davis; William Barclay Parsons; Professor W. H. Burr, of Columbia University; Gen. Henry H. Abbott; Eugene Tincauzer, German delegate; Edouard M. Quellenac, of the Suez Canal staff; Isham Randolph; F. P. Stearns; Joseph Ripley; W. H. Hunter, of the Manchester Canal; Adolph Guerard, French delegate; J. W. Welcker, Dutch delegate, and Capt. John C. Oakes, secretary.

A CABLEGRAM from London states that William P. Byrne, principal clerk of the home office; Dr. Horatio B. Donkin, a commissioner of prisons and consulting physician to Westminister Hospital; Dr. William H. Dickinson, consulting physician to St. George's Hospital and former president of the Royal Medical and Chirurgical Society; J. C. Dunlop and Mrs. Pinsent, composing the sub-committee of the Royal Commission on the care and control of the insane, sailed from Liverpool for New York, on September 30, on the Cunard Line steamer *Etruria,* to investigate American methods of treating the insane.

DR. H. P. BOWDITCH, professor of physiology at the Harvard Medical School, has been granted leave of absence for the coming year.

THE Herter Lectures, established by Dr. C. A. Herter at the New York University and Bellevue Hospital Medical College, will be given this year by Professor Carl von Noorden, chief of the City Hospital, of Frankfort, Germany. His subject will be 'Diabetes.' The lectures, six in number, will be given in English in the large auditorium of the Carnegie Laboratory, 338 East 26th Street, October 9 to 14, inclusive, at 4 o'clock in the afternoon. Visitors are welcome to these lectures. Reserved seats are to be had on application to the college.

AT the first fall meeting of the New York Academy of Sciences, Professor Robert W. Hill will lecture on 'The Republic of Mexico, its Physical and Economic Aspects.' The lecture will be given in the large lecture hall of the American Museum of Natural History, and all interested are invited to attend.

THE Harben Lectures of the Royal Institute of Public Health will be delivered in the lecture room of the institute, on October 10, 12 and 17, by Professor Thomas Oliver, physician to the Royal Infirmary, Newcastle-on-Tyne. The subject of the lectures will be, 'Some of the Maladies caused by the Air we Breathe in the Home, Factory and the Mine, including a Description of Caisson Disease or Compressed Air Illness.'

PROFESSOR WILLIAM OSLER, regius professor of medicine at Oxford University, has accepted the post of Thomas Young lecturer on medicine at St. George's Hospital, and will give a series of lectures and demonstrations at the hospital next spring on the diagnosis of abdominal tumors.

DR. A. M. FAIRBAIRN, principal of Mansfield College, Oxford, England, who has accepted an appointment as Deems lecturer at New York University, will deliver his course of lectures in January.

PROFESSOR CHARLES SCHUCHERT, of Yale University, has returned from a geological trip extending over the ancient formations of Nova Scotia, New Brunswick and eastern Quebec.

A CABLEGRAM to the daily papers states that Mylius Ericksen is preparing a Danish ship and a sledge party for an expedition to the hitherto unexplored regions of the northeastern coast of Greenland. The plans have been in course of elaboration since Ericksen's return from his last expedition, and have been approved by many societies, including the American Geographical Society and the Royal

Geographical Society of London, and also by Dr. Nansen, Professor von Drygalski and other scientific men.

American Medicine states that during the epidemic in New Orleans an opportunity has been afforded for careful study of conditions leading to the infection, with the result, it is believed, that the causative microorganism has been isolated and identified. The work has been conducted at the emergency hospital by Drs. P. E. Archinard, J. Birney Guthrie and J. C. Smith. The life history of the organism discovered by Dr. Archinard has been followed, and its presence in the blood of patients confirmed.

Sir Thomas Browne, the author of 'Religio Medici,' was born on October 19, 1605, and the quatercentenary will be celebrated at Norwich on the same date this year. *The British Medical Journal* states that the memorial statue of Sir Thomas Browne, erected in the Market Place, will be unveiled at 12:30 P.M. by Lord Avebury, F.R.S.; afterwards a luncheon will be held at the Blackfriars Hall. At 8:30 P.M. there will be a service in memory of Sir Thomas Browne in the Church of St. Peter Mancroft, Norwich, near which he lived for many years, and in which he worshipped, and lies buried; the sermon will be preached by the Right Rev. Bishop Mitchinson, master of Pembroke College, Oxford, of which college Sir Thomas Browne was a member.

Dr. Alfred Schaper, assistant to the professor of embryology at Breslau, has died at the age of forty-two years.

The deaths are also announced of Dr. Franz Ruch, docent in geodesy in the Technical Institute at Prague, and of Dr. Rudolf Pernthner von Lichtenfelds, docent in architectural engineering in the Polytechnic Institute at Vienna.

The second general international sanitary convention will meet in Washington on October 9. The different South American republics will be represented, and many European men of science will be in attendance.

A Civil Service examination will be held October 25, 1905, to establish a register of eligibles from which to fill four positions as laboratory assistant in the Bureau of Standards, Washington. Three of these positions are in the Electrical Division of the Bureau and one in Weights and Measures; the salaries are $900 and $1,000. The examination will consist of:

Education and experience (rated on application form)	50
General physics	25
Special subjects (it is optional with the competitor to take more than one of these subjects)—(*a*) electrical measurements; (*b*) weights and measures	25
Total	100

Any one wishing to take the examination should address the U. S. Civil Service Commission requesting application blanks. Further information may be obtained by addressing the director of the Bureau of Standards. Applicants must be between 20 and 35 years of age.

The Smithsonian Institution has received information through the Department of State, from Consul General George Heimrod, of Apia, Samoa, that between August 2 and 4, last, a new volcano broke out in Savaii, about eight miles east of the old volcano Mangi, and ten miles south of Matautu. Mr. Heimrod states that the activity of this volcano is phenomenal, as in a single fortnight it created a new mountain with three peaks, one of which will soon reach a height of 800 feet or 2,000 feet above sea-level. The ejected matter represents many millions of tons of unsmelted rocks, slag, cinders and ash, which at the beginning of the outbreak in its fiery state was moving towards the sea, the settled part of the island. The mass is about five miles long and one fourth of a mile wide, and as it has almost come to a standstill and is hardening at its extreme ends, danger for life and property is not anticipated.

In connection with the Conservatoire des Arts et Métiers a museum of industrial hygiene will be opened this month at Paris by the president of the republic.

According to *The Journal of the Society of Arts* the British consul at Naples reports that the work on the new wing which is being

added to the Stazione Zoologica is making rapid progress. When completed the capabilities of the institution for scientific investigation in connection with fishing and other questions will be more than doubled, and the extension would seem to be much wanted, for during the spring months of the present year no less than seventy naturalists of all nationalities were engaged in various researches, and fifteen applicants had to be refused admission on account of the lack of accommodation. The completion of the new building, the ground plan of which measures 110 by 77 feet, will permit the following improvements to be made: (1) The unique library of books on marine biology will be brought together upon the same floor instead of being distributed in various rooms; (2) laboratories and workrooms equipped under the superintendence of Dr. Henze for research in the physiological chemistry of marine animals will be the best and largest of their kind, and will occupy the second floor of the new building; (3) laboratories and workrooms for other physiological work in connection with marine animals will occupy the first floor; (4) a new photographic and artists' room will be gained; (5) a bacteriological laboratory; (6) some thirty new rooms for private study. The basement will be occupied by enormous aquaria and tanks, with the necessary engines for working the circulating pumps and for supplying power to the engineer's shop.

THE Wagner Free Institute of Science, Philadelphia, announces the following courses of lectures: Professor Samuel T. Wagner, 'Roads, Railroads and Tunnels'; sixteen lectures, as follows: September 15, 22, 29; October 6, 13, 20, 27; November 3, 10, 17, 27; December 1, 8, 15, 22, 29. Dr. Philip P. Calvert, 'The Development and Life Histories of Invertebrate Animals'; ten lectures, as follows: October 2, 9, 16, 23, 30; November 6, 13, 20, 27; December 4. Professor Henry Leffmann, 'Metals and Ores'; ten lectures, as follows: October 4, 11, 18, 25; November 1, 8, 15, 22, 29; December 6. Professor Wm. B. Scott, 'Physiographical Geology'; sixteen lectures, as follows: January 3, 10, 17, 24, 31; February 7, 14, 21, 28; March 7, 14, 21, 28; April 4, 11, 18. Professor Geo. F. Stradling, 'Electricity'; sixteen lectures, as follows: January 5, 12, 19, 26; February 2, 9, 16, 23; March 2, 9, 16, 23, 30; April 6, 20, 27. Dr. John W. Harshberger, 'North American Trees'; ten lectures, as follows: February 5, 12, 19, 26; March 5, 12, 19, 26; April 2, 9.

THE policy of holding annually a meeting of the principal engineers of the Reclamation Service for the purpose of discussing matters of administration and economies of work seems to have become well established. The reclamation act was signed by the president, on June 17, 1902. An engineering corps consisting of well-trained and experienced men has been gradually selected through the Civil Service Commission to meet the needs of the service, and the work of reclamation has been energetically pushed in all parts of the arid region. The first conference of engineers was held at Ogden, Utah, September 15 to 18, 1903, in connection with the eleventh Irrigation Congress. The first session of the second conference was held at the time of the meeting of the twelfth Irrigation Congress, at El Paso, Texas, November 14 to 18, 1904. On this occasion the principal engineers of the Reclamation Service met prominent citizens from the west and exchanged views with them regarding reclamation matters of common interest. The conference adjourned to meet in Washington in January, 1905, in order to allow opportunity for other engineers to take part in the discussions and to give additional time for consideration of important details. At the adjourned meeting in Washington a number of prominent public men met the engineers and exchanged views concerning matters in various states. The discussions that occurred at this meeting and the papers presented then constitute a very valuable body of material. The printed report of the proceedings of the first conference, that at Ogden, was distributed as Water-Supply and Irrigation Paper No. 93 and was found to be of great assistance to the men engaged in reclamation work. On the recommendation, therefore, of Mr. F. H. Newell, chief engineer,

the proceedings of the second conference have been collected and published by the United States Geological Survey. They are now available as Water-Supply and Irrigation Paper No. 146, and may be obtained free of charge on application to the director of the Survey, Washington, D. C. Besides data concerning the organization of the hydrographic branch of the Geological Survey and the Reclamation Service, the paper contains the minutes of the conference at El Paso and the conference at Washington, the address of the chief engineer, the papers read at the conference, committee reports, circulars relating to a variety of subjects, and brief biographical sketches of all persons employed in the Reclamation Service.

UNIVERSITY AND EDUCATIONAL NEWS.

MR. JAMES MILLIKAN, who has given $900,000 for the establishment of a university at Decatur, Ill., which shall bear his name, has offered to give a further million dollars to the institution.

MAJOR HENRY E. ALVORD, the late chief of the dairy division of the Department of Agriculture in Washington, divided his library between Norwich University, of Vermont, his alma mater, and the Massachusetts Agricultural College at Amherst. To the latter institution he bequeathed also a fund of $5,000 for an Alvord dairy scholarship. This, however, is subject to the life interest of his widow.

ACCORDING to the *New York Evening Post* Dr. Kisaburo Yamaguchi, an official in the Central Office of Mines, Tokio, has announced that Johns Hopkins will be made the recipent of an extensive collection of Japanese minerals.

DR. JOHN N. TILLMAN was inaugurated as president of the University of Arkansas, at the opening of that institution, on September 20.

DR. WILLIAM LOUIS POTEAT, for some years professor of biology in Wake Forest College, North Carolina, was recently elected president of the same institution. It is proposed to have the inaugural exercises in December.

AT the University of Illinois James McLaren White, professor of architectural engineering, has been appointed acting dean of the College of Engineering; Edgar J. Townsend, associate professor of mathematics, acting dean of the College of Science, and Dr. Edwin G. Dexter, professor of education, director of the School of Education. Appointments have further been made as follows: Professor S. E. Slocum, assistant professor of mathematics; F. O. Dufour, of Lehigh University, assistant professor of civil engineering; C. H. Hurd, University of Chicago, assistant professor of applied mechanics; Edward O. Sisson, formerly director of Bradley Polytechnic Institute, Peoria, and Frank Hamsher, principal of academy, assistant professors of education; Dr. Edward Barto, associate professor of chemistry and director of water survey; W. J. Risley, University of Michigan, instructor in mathematics and astronomy; John Watrous Case, Massachusetts Institute of Technology, instructor in physics.

DR. LEO F. GUTTMAN, of London, for two years research assistant to Sir William Ramsay, has arrived from abroad to take up his duties as Carnegie research assistant to Professor Charles Baskerville, of the College of the City of New York, in his chemical investigations of the rarer earths.

DR. WILHELM F. KOELKER, who recently took his degree with Professor Emil Fischer at the University of Berlin, has been appointed instructor in organic chemistry at the University of Wisconsin.

MR. C. G. ELDREDGE, of Sabula, Iowa, has been appointed assistant in the chemical department of Cornell College.

DR. H. A. HIGBEE and Dr. Roger C. Wells have been appointed instructors in physics in the University of Pennsylvania.

PROVISION has been made for a professorship of botany at the University of Melbourne and for the erection of a botanical laboratory.

DR. KONRAD DIETRICI, of Hanover, has been called to the chair of physics at Rostock.

PROFESSOR O. PUMLIRZ, of Czernowitz, has been called to the chair of mathematical physics at Innsbruck.