Moisture	14·0
Oil or fat	2·0
Proteids	8·5
Starch	29·2
Dextrin and soluble starch	22·9
Sugar	17·5
Cellulose, &c.	3·3
Ash	2·6
	100·0

The cakes were found to contain only 6·7 per cent. of proteids, with 3·4 per cent. of flour. The large amount of dextrin is due to the high temperature to which the chestnuts are subjected in the process of drying. Prof. Church thinks that chestnut-flour ought to be of easy digestibility, and a suitable children's food, considering that it contains over 40 per cent. of nutritious matters soluble in pure water. The Museum of the Royal Gardens is indebted to Mr. George Maw for a specimen of a product used, according to the Rev. Wentworth Webster, who procured it, as tea in the Basses Pyrenées in France, and on the Spanish side of the Pyrenées in Navarre. It was found to consist of the dried shoots of a species of *Lithospermum*, which was identified with probability as *L. officinale*." Mr. Noble advocates the cultivation of rye-straw (*Secale cereale*) as a paper material, not inferior to esparto. Mr. W. L. Booker, H.M.'s Consul at San Francisco, sent some specimens of a scented wood from the highlands of Mexico, known as Lin-a-Loa, and which has been identified with a wood already in the Kew Museum, and which appears to be yielded by a species of *Bursera*. Further material in the shape of dried specimens, with both fruit and flowers, is much to be desired for the purpose of ascertaining definitely the tree which produces it. The name Lin-a-Loa is clearly a corruption of Lign Aloës, which has been identified with *Aquilaria agallocha*, otherwise known as eaglewood (Kew Report, 1878, p. 36). This is however a tree confined to the Old World, and the Mexican one has no connection with it. The wood of the latter is imported into this country for manufacture into perfumery, a fragrant oil known as otto of linaloe being distilled from it. On the interesting Chinese timber-tree known as the Nan-mu-tree, and referred to in the Report for 1877, some information has been obtained from Mr. Baber:—"Two days' journey south-east of Chungking in Szechuen I found several specimens of about a foot in diameter, one of them having a straight branchless trunk of 100 feet in height, with the branches and foliage rising 25 feet above that; another had 70 feet of bare straight stem, and 90 feet of total altitude. Although the trunks are branchless, yet in many cases they send out shoots resembling saplings, which rise parallel with the trunk. The wood is white and close-grained, and I do not believe that the pillars at the Ming tombs near Peking are of this wood. They look more like true teak. I have seen some much larger trees than the above, some two feet and more in diameter, straight and of great altitude. They are used in Szechuen for bridge work." Eventually, through the instrumentality of Père Vincot, who resides at Chungking, flowering specimens were transmitted to the Kew Herbarium. From these a figure has been prepared, and they entirely confirm the previous identification of the tree by Prof. Oliver (from the leaves alone) as a near ally of *Phœbe pallida* (one of the laurel family). The genus *Phœbe* is now merged in *Persea*, and Prof. Oliver has described the Nan-mu under the name of *Persea nan-mu*, distinguishing it from *Persea* (*Phœbe*) *pallida* "chiefly in stature, in the form of the acumen of the leaves and the character of the indumentum." On a block of Pai-chai wood sent by Mr. W. M. Cooper, H.B.M.'s Consul at Ningpo, Mr. R. J. Scott reports:—"The most striking quality I have observed in this wood is its capacity for retaining water and the facility with which it surrenders it. This section, which represents one-tenth of the original piece, weighed 3 lbs. 4½ ozs. At the end of twenty-one days it had lost 1 lb. 6¾ ozs. in an unheated chamber. At the end of another fourteen days, in a much elevated temperature, it only lost ¼ oz. In its present state of reduced bulk its weight is 1 lb. 10 ozs. It is not at all likely to supersede box; but it may be fit for coarser work than that for which box is necessary." The principal researches conducted in the laboratory during the past year have been those of Mr. Marshall Ward, on the development of the embryo-sac, published in the *Journal* of the Linnean Society, vol. xvii. pp. 519–546; Prof. Church, continued investigation on albinism in leaves, published in the *Journal* of the Chemical Society, January, 1880. The laboratory has also been employed for the experimental demonstrations given to the *employés* of the Royal Gardens, and for the examination of the University of London for the degree of Doctor of Science in the subject of physiological botany.

UNIVERSITY AND EDUCATIONAL INTELLIGENCE

OXFORD.—The examinations for the degree of Bachelor of Medicine will commence in the medical department of the Museum as follows:—

The First (Scientific) Examination) November 29.

The Second (Final) Examination, December 6.

Candidates for either of these examinations, and candidates for the certificate in Preventive Medicine and Public Health are requested to send in their names on or before November 15 to the Regius Professor of Medicine at the Museum.

The University of Oxford Commissioners have given notice that all new scholarships and exhibitions granted by the Colleges shall be subject to the provisions of any new statutes which may be made by the Commissioners in relation to the length of tenure and emoluments of such scholarships and exhibitions.

The University Commissioners at present sitting have forwarded to the Hebdomadal Council six proposed statutes which they contemplate making, subject to any representation which they may receive from the Council on the appointment and duties of University Professors and Readers. The proposed statutes include certain general regulations applicable to the whole Professoriate. Each Professor must reside six months in each year between October 1 and the ensuing July 1. Each Professor, besides his regular course of lectures, must give one public lecture every year. Each Professor must give private instruction to students in matters relevant to the subject of his lectures, and must examine the students who have attended his lectures at the end of each course.

The following are the particular regulations applicable to the Savilian Professor of Astronomy, the Professor of Experimental Philosophy, the Waynflete Professor of Chemistry, the Linacre Professor of Human and Comparative Anatomy, the Waynflete Professor of Physiology, and the Wykeham Professor of Physics. Section 7 relates to the three proposed new professorships.

(1) The Professor shall deliver one course of fourteen lectures at least in each of two out of the three University terms (Easter and Trinity Terms being counted as one); every course shall extend over seven weeks at least, and not fewer than two lectures shall be delivered in each week.

(2) He shall be ready to give the private instruction required by the General Regulations on two days in each week in which he lectures, and during one hour at least on each of such days.

(3) The laboratory under the charge of each Professor, and, in the case of the Savilian Professor of Astronomy, the University Observatory, shall be open for eight weeks in each term (Easter and Trinity Terms being counted as one), and at such other times, and for such hours, as the University may by statute determine.

Students shall be admitted to the University Observatory and to the laboratory under the charge of each Professor, upon such conditions as the University shall from time to time by statute determine, and upon the terms of paying such fees, not exceeding such amount as may be fixed by any statute of the University in force for the time being, as the Professor may from time to time require.

(4) Except for some grave reason to be approved by the Vice-Chancellor, the Professor shall, for seven weeks in each term (Easter and Trinity Terms being counted as one), and during some part of three days in each week, be ready to give instruction in the subjects of his Chair to such students as shall have been admitted to the laboratory under his charge (or, in the case of the Savilian Professor of Astronomy, to the University Observatory); and such instruction shall be given in the laboratory or observatory (as the case may be) or in some class-room connected therewith.

(5) The Professor shall also, at the close of each term, inform any college which may request him to do so as to the regularity of attendance and the proficiency of the students belonging to such college who have been admitted into the laboratory or observatory under his charge, and shall give like information, if requested, to the delegates of students not attached to any college or hall.

The Particular Regulations next following shall be applic-

able to the several Professors named in them respectively (that is to say):

(1) The Savilian Professor of Astronomy shall have the charge of the University Observatory, and shall undertake the personal and regular supervision of the same, and of the several demonstrators and other assistants employed therein, and shall be responsible for all the work carried on there.

(2) The Professor of Experimental Philosophy shall have the charge of the Clarendon Laboratory, and shall undertake the personal and regular supervision of the same, and of the several demonstrators and other assistants employed therein, and shall be responsible for all the work carried on there.

(3) The Waynflete Professor of Chemistry shall have the charge of the Chemical Laboratories in the University Museum, or such part thereof as the University may by statute assign to him, and shall undertake the personal and regular supervision of the same, and of the several demonstrators and other assistants employed therein, and shall be responsible for all the work carried on there.

(4) The Linacre Professor of Human and Comparative Anatomy shall have the charge of the Anatomical and Ethnological Collections and the Anatomical Laboratories in the University Museum, or such part thereof as the University may by statute assign to him; and shall undertake the personal and regular supervision of the same, and of the several demonstrators and other assistants employed therein, and shall be responsible for all the work carried on there.

(5) The Professor of Botany and Rural Economy shall have the charge and supervision of the Botanical Gardens and Botanical Collections belonging to the University; and it shall be part of his duty to make such Gardens and Collections accessible to, and available for, the instruction of students attending his lectures.

(6) The Professors of Geology and Mineralogy respectively shall have the charge and supervision of the Geological and Palæontological Collections, and of the Mineralogical Collection, belonging to the University; and it shall be part of their duties to make such collections respectively accessible to, and available for the instruction of, students attending their lectures.

(7) The Professor of Classical Archæology, The Wykeham Professor of Physics, and The Waynflete Professor of Physiology,

shall, in like manner, if the University by Statute shall think fit to charge them therewith, undertake the charge of any collections or laboratories connected with the subjects of their respective Chairs, which the University may from time to time assign to them, and shall have similar duties in respect thereof.

(8) The several Professors named in the foregoing particular regulations shall in the performance of the duties committed to them by such regulations be subject to the statutes of the University for the time being in force in that behalf.

This Statute is proposed to be made by the University of Oxford Commissioners under the Universities of Oxford and Cambridge Act, 1877, for the University.

SOCIETIES AND ACADEMIES

PARIS

Academy of Sciences, October 26.—M. Wurtz in the chair.—The following papers were read:—On attenuation of the virus of chicken-cholera, by M. Pasteur. If the most virulent virus (to be got from a fowl which has died of the chronic form of the disease) be taken and successive cultivations made of it in the pure state, in bouillon of fowl's muscles, the interval of time between one sowing and another is found to affect the virulence. With intervals up to one month, six weeks, or two months, no change of virulence is noted, but as the interval is enlarged the virus is found to become weaker. The attenuation does not take place with mathematical regularity. No change can be detected in the microscopic organisms to account for the changes in its power. But M. Pasteur shows by experiments (in which some bouillon, to which a little strong virus had been added, was inclosed and kept some time in sealed tubes) that it is probably the oxygen of the air that attenuates the virulence. May it not then also affect other kinds of virus?—Experimental study of the action of the organism of sheep, more or less refractory to splenic fever, on the infectious agent; what becomes of specific microbia introduced directly into the circulation by large transfusions of anthracoid blood, by M. Chauveau. After such transfusion into animals whose resistance to the disease is considerable and strengthened by preventive inoculation, the bacterian rods soon disappear from the blood (in a few hours one cannot find them). They are not destroyed, however, but are arrested in the capillary system of the lungs and of other parenchymatous organs, where they may be found with retained vitality when the transfusion has been rapidly fatal. When the animal survives more than three days the bacteria disappear from the lung and the spleen (as well as the blood), and health may be regained. One region alone proves favourable to maintenance and development of the bacterian life, viz., the surface of the brain (pia mater), and the development there has quite special characters (elongation and inflexion of the rods and appearance of spores), resembling those which belong to artificial cultivations. The infectious activity of these bacteria of the pia mater is considerable.—On linear differential equations, by M. Appell.—The Secretary announced the opening of a subscription for erection of a monument to the memory of Spallanzani in his native town.—On the class of linear differential equations, with rational coefficients, the solution of which depends on the quadrature of an algebraic product which contains no other irrationality than the square root of an entire and rational polynome, by M. Dillner.—Photography of the nebula of Orion, by Prof. Draper.—Application of selenium to the construction of a photo-electric regulator of heat for the burning in of stained glass windows, by M. Germain. As far as possible from the muffle furnace is placed a dark chamber closed by a parabolic reflector, the focus of which is in the axial line of the telescope commonly used. At this focus is a ball of selenium between two cups of brass, leaving a zone of selenium visible. One cup is connected by German silver wire to a thermo-electric pile (of thirty elements), adapted for strong heat and exposed to that of the muffle, and the pile is connected (by the other poles of its elements) to the side of a stoppered porous vessel filled with water, ensuring a sensibly constant temperature on that side. The thermo-electric current increases with the temperature, and while the part of the muffle covered by the telescope remains dark, the selenium does not effectively alter in resistance, but when a cherry-red tint is reached (indicating time to stop), the resistance of the selenium is reduced about a fourth. The current gains strength and sounds a bell, or affects a system whereby the fuel is diverted. (With the pile is connected a galvanometer, a condenser, and other secondary arrangements.)—On some modifications undergone by glass, by M. Salleron. He calls attention to the corrosion, deformation, and fracture of areometers used in sugar-works which treat molasses by osmose; where the instruments are kept several days in a liquid at 95°, of density, 1014 (2° B), and containing sugar 115 gr., ash 91 gr.; total 206 gr. per litre. The ash consists of chloride of potassium and organic salts of potash. The cracks are all more or less spiral in form.—Influence of light on germination, by M. Panchon. He measured the quantities of oxygen absorbed during germination by identical lots of seeds. Light (he finds) accelerates the absorption in a constant manner; the advantage in favour of light being from a fourth to a third of the quantity absorbed in darkness. The degree of illumination is relative to the quantity absorbed. The respiratory acceleration in seeds illuminated by day persists for several hours in the darkness. The accelerative influence of light is more intense at low temperatures.

CONTENTS