terminal velocity. This velocity is attained when the force of resistance in the medium in which the body is moving is equal to the weight of the body. Greenhill had also a letter in the same issue, and in the following week Sir William Ramsay and Sir Oliver Lodge had letters which supported the point of view of Hardcastle and Greenhill. Hardcastle quotes from St. Thomas Aquinas's "Opera Omnia" (Leonine edition), which shows quite clearly that different media were considered by Aristotle—earth, air or water or other things—and if air is twice as 'subtile' as water, then for an equal distance the time of translation in water will be twice that in air. It may be added that the story, so often repeated, about Galileo dropping the weights from the Leaning Tower of Pisa close to the professors' heads as they came out from their lectures is now admitted, like some other stories about Galileo, to be apocryphal. Among these must be included the story that Galileo was the first to disprove the alleged statement of Aristotle about the velocities attained by falling bodies of different weights.

Lunar Auroras

Sky and Telescope of September contains a short note on this subject which deals with a suggestion made by Prof. Mohd. R. Khan, Hyderabad, in *Popular Astronomy* of June. This suggestion is that auroral phenomena would occur on the portion of the moon's surface that is lighted up by earthshine, should there be any appreciable atmosphere on our satellite. While it would not be possible to observe the auroral streamers, he suggests that a study of the spectrum of the earthshine on the moon might reveal the presence of the stronger of the forbidden lines of oxygen and nitrogen which are characteristic of auroras. Simultaneous spectra of neighbouring regions of the sky should also be obtained to avoid confusion between lunar and terrestrial auroral light. Prof. J. Kaplan, University of California, not only supports the suggestion but also enlarges upon it. He points out that direct photographs made with infra-red sensitive plates and filters would record the auroral band at 15,000 A. due to ionized nitrogen. Variations in such photographs would reveal the presence of the aurora; they would require shorter exposure times, and would also be easier to obtain than the corresponding spectra.

The New Anatomy

Classical anatomy, the study of visible structure for structure's sake, has long since exhausted itself (and others). But a new generation of anatomists is showing us that, when morphological observations are correlated with parallel biochemical and biophysical analyses and with considerations of function, profitable advances may result, and that, handled in this way, anatomy has still much to contribute to biological science. Prof. J. Z. Young, in his inaugural lecture as professor of anatomy at University College, London, developed this theme and put forward some stimulating suggestions for future progress in anatomical research. He deplored the rigid departmental segregation of anatomists, physiologists, biochemists, pharmacologists and so on, which so usually exists in medical schools, and urged that all should regard themselves primarily as human biologists. Each worker must necessarily practise his own specialized technique; but he should endeavour to correlate his findings with those derived from other, and often widely differing, techniques, and so view his problem from all possible angles. Prof. Young's own work on the degeneration and regeneration of nerve, in which a correlation of histological with physico-chemical findings led to an entirely new concept of the nerve fibre, is a case in point. He gives a timely warning to biologists against a too mechanistic interpretation of their subject. Living structures show an organisation or pattern on a higher level than that ordinarily regarded as physical or chemical; consequently a purely physical or chemical approach is generally inadequate for the total handling of a biological problem.

Another fact, often overlooked in our preoccupation with seeking to relate cause and effect, is that living systems exhibit a continuous and spontaneous activity of their own, which is the very essence of being 'alive', quite apart from any response which they may make to external stimuli or experimental manipulations. This is well seen in the case of the nervous system, where the concept of reflex action, which appeals so much to the 'cause and effect' mentality, has singularly failed to account for the more important features of higher nervous activity. In this connexion Prof. Young makes the interesting suggestion that the overall pattern of organisation of the neuropil, rather than the detailed point connexions of the individual fibres, might have some significance in the interpretation of higher nervous functions. The title of Prof. Young's address was "Patterns of Substance and Activity in the Nervous System" (London: H. K. Lewis and Co., Ltd., 1946. 1*s*. 6*d*. net). Following the tradition of his distinguished predecessors at University College, he is primarily interested in the nervous system, and he chose to illustrate his theme in that context; but the theme is applicable to all biological inquiry, and his stimulating and thoughtful address will be widely welcomed, particularly by medical men of science.

Faculty of Science, Fouad I University

The annual report for 1944–45 of the Faculty of Science, Fouad I University, Cairo, gives a brief indication of research work in progress, with lists of papers published and titles of theses for which degrees in science were awarded. In the Department of Applied Mathematics, R. H. Makkar has completed a thesis on "Series of Polynomials", and M. Tolba is investigating the question of two points expansion of functions, while in the Department of Applied Mathematics, Prof. M. A. Omara is engaged on determining the velocity potential of the fluid motion induced by a cylinder moving in an infinite mass of compressible fluid, and Dr. Hammad is still investigating the passage of sunlight through the atmosphere. In the Department of Physics, Prof. Fahmy has continued his work on the relativity of the electron and proton, in addition to supervising investigations on molecular polarization of vapours at different temperatures, electron polarization, electron diffraction and the viscosity of gases. Other work, under Dr. Mokhtar, has covered the scattering of supersonics, the measurement of absorption coefficients by acoustic materials and the tone qualities of musical instruments. The Meteorological Section has investigated matters connected with rainfall, sea-breezes, thunderstorms, floods in Egypt and north-east winds in the Nile Delta, while the Electronics Section has studied secondary emission, electron reflexion, X-ray analysis and Young's modulus.

In the Department of Botany, work on the anatomical determination of Pharaonic plant remains, carbohydrate and nitrogen metabolism, plant reactions to colchicine and β-indolylacetic acid, the effect of environmental factors on stomatal movements, the bacteriostatic effect of fungal metabolic products and organic chemicals and the ecology of Lake Edku are continuing; other investigations include a substitute colouring matter in butter, and the autecology of certain organisms. In the Department of Zoology, Prof. K. Mansour continued his study of some of the morphological and physiological aspects of the Lamellibrachiata (some of which have been reported in *Nature*), Prof. A. Naef his studies of the primitive Chordata, Dr. M. Waly his work of the Reptilia of Egypt and the fishes of the Nile, and Dr. F. Khalil the physiological investigation of the metabolism and excretion in some desert reptiles. Other investigations have covered the effect of triphenylchloroethylene on the development of the gonads of the frog, Egyptian spiders, the tympanic region of the Egyptian Insectivora, Chiroptera and Rodentia, yolk formation in the eggs of Mollusca, the chick embryo, etc. Work in the Department of Entomology has dealt with the biology of Egyptian insects, ecological studies of the insect fauna of freshwater ponds in the region of Cairo, and a biological and ecological survey of the Asterolecaninæ. A note on the Library states that exchange activity with other universities and learned societies has now been resumed.

Francis Amory Septennial Prize of the American Academy of Arts and Sciences

UNDER the terms of a gift in the will of the late Francis Amory of Beverly, Massachusetts, the American Academy of Arts and Sciences offers a substantial prize for outstanding work on the alleviation or cure of diseases affecting the human reproductive organs. The gift provides a fund, the income of which may be awarded at seven-year intervals "as a prize and gold medal, or other token of honor or merit", to any individual or individuals for work of "extraordinary or exceptional merit" in this field. The next award is to be made in 1947. No formal applications and no essays or treatises from individuals are solicited; but suggestions will be welcome from any appropriate source that will be of aid to the Committee in making a wise selection. Recommendations may be addressed to Secretary, Amory Fund Committee, American Academy of Arts and Sciences, 28 Newbury Street, Boston, Massachusetts, U.S.A.

Institution of Civil Engineers: Awards

THE following medal, premiums and prizes of the Institution of Civil Engineers have been awarded for the papers mentioned, which have been discussed, or published without oral discussion, during the session 1945–46. *Baker Gold Medal:* G. L. Groves, in recognition of his work in connexion with the Ilford Tube. *Coopers Hill War Memorial Prize:* G. A. Maunsell, "Menai Bridge Reconstruction". *Telford Premiums:* K. C. Appleyard and G. Curry, "Opencast Coal Production in Wartime"; R. F. Wileman and H. W. Clark, "The Measurement of the Discharges of the River-basins of the White Nile (Sudan) and Nene (Great Britain)"; M. R. James, "Renewal and Extension of Pumping Machinery for the Metropolitan Water Board"; A. E. Reid and F. W. Sully, "The Construction of the King Feisal Bridge and the King Ghazi Bridge over the River Tigris at Baghdad"; J. N. McFeeters, "Concrete Runways"; J. K. Fisher, Alfred Goode and C. E. Docker, "Some Problems in the Design and Construction of Large Airfields"; J. D. Atkinson and George Cardiacos, "The Reconstruction of the Diyala Weir"; Robert Struthers and J. W. Lovatt, "Construction of a Heavy-Duty Concrete Runway"; Rudolph Glossop and A. W. Skempton, "Particle-size in Silts and Sands"; C. H. Dobbie, "Some Sea Defence Works for Reclaimed Lands". *Manby Premium:* Rowland Nicholas, "Highway Planning, with Particular Reference to Traffic Capacities". *Crampton Prize:* C. T. Mitchell, "Some Economical Aspects of Modern Earthmoving Equipment"; George Graham and F. R. Martin, "Heathrow. The Construction of High-grade Quality Concrete Paving for Modern Transport Aircraft". *Trevithick Premiums:* James Lorimer, "Some Uses of Explosives in Civil Engineering"; A. H. Toms, "Repairs to Railway Viaduct over London Road, Brighton, after Damage by Enemy Action in May 1943". *Indian Premiums:* Sir Claude Inglis, "Training Works constructed in the Rupnarain River in Bengal—after Model Experiments—to Prevent Further Bank Erosion endangering the Bengal–Nagpur Railway Line Linking Calcutta with Bombay and Madras"; C. G. Sexton, "The Construction of the Coronation Bridge over the Tista River, North Bengal, India"; Philip Claxton, "The Still-Water Pocket Principle".

The following Medal and Prizes have been awarded to students for papers read before local associations. *James Forest Medal and a Miller Prize:* O. H. Senogles, "The Superficial Geological Deposits of the Manchester Area" (North-Western Association, Manchester). *Miller Prizes:* F. N. Kirby, "The Development of the Parsons Steam-Turbine" (Newcastle-on-Tyne and District Association); J. A. Williams, "A Survey of Current Practice on the Design of Storm-water Overflow Works" (Newcastle-on-Tyne and District Association); Wilfred Eastwood, "Surface Water Drainage from Roads and under British Conditions" (Yorkshire Association); G. S. Glendinning, "Distribution of Rainfall and Run-off from Catchment Areas" (Edinburgh and District Association); T. E. H. Williams, "Bridge Construction with Special Reference to Foundations" (Birmingham and District Association); R. W. Winkler, "Repairs to an Early Nineteenth Century Sea Wall" (Edinburgh and District Association); G. F. Clark, "Timber Bridges—Various Types and Their Construction" (Edinburgh and District Association); D. D. Treharne, "Opencast Coal Production" (South Wales and Monmouthshire Association).

Announcements

THE honorary degree of D.Sc. has been conferred by the University of Oxford on Prof. H. C. Urey, professor of chemistry and director of nuclear research in the University of Chicago.

DR. F. DIXEY, director of geological surveys, Nigeria, has been appointed director of Colonial Geological Surveys, in which position he will be adviser on all geological matters to the Secretary of State for the Colonies.

DR. AUGUSTIN E. RIGGI has been appointed director of the Argentine (Bernardino Rivadavia) Museum of Natural Sciences at Buenos Aires.