of this procedure will be that members of the committees will be constantly face to face with the question—what is the content of this final year of compulsory schooling and what is its probable value in any particular case? It is, the article points out, in this connexion, that loyal and willing co-operation between the Board of Education, local authorities and teachers will be specially desirable. A series of articles by Dr. Percival Sharp, secretary of the Association of Education Committees, on the problems presented by the administration of the new Act, is promised.

THE 'brain trust' in American politics is symptomatic of that pronounced swing towards the social sciences which has been one of the most noticeable features of university life in the United States in recent years. Commenting on this movement, the president of Yale University in an Alumni Day address urged the frank and definite recognition by universities of the "preponderant importance for our day and for the immediate future of the crucial problems of the industrial and economic order and of the individual human life in all its physical, social and spiritual aspects". Failing such recognition and energetic fulfilment of the universities' correlative obligations to the social order, they may have to face "the destruction of all that we and our predecessors have given our lives to create". But the 'brain trust', in so far as it involves the exploitation of university faculties by Government departments, is obviously liable to abuse, and a public protest has, according to *School and Society* of July 25, been made by Mr. Walter Lippmann and eight other prominent alumni of Harvard against the consequential neglect by professors of their academic duties. In Great Britain, on the other hand, one doubts whether Government departments make sufficient use of the brains of university staffs and advanced students. In the Ministry of Labour's report for 1935, for example, there is no evidence of contact between the Ministry and university departments concerned with cognate matters, although these doubtless study the masses of statistics provided by the Ministry.

THE president of Columbia University, New York, Dr. Nicholas Murray Butler, in his recent "Commencement Day" address on "The Decline and Fall of Morals", quoted Thomas Jefferson's prophecy that the cult of the "almighty dollar" would lead to heavier and heavier shackling of the people's freedom "till our rights shall revive or expire in a convulsion" —an alternative which is, Dr. Butler declared, the one dominant question before the world to-day. With this question is also bound up the fate of morals, for the destruction of liberty would make morals impossible. He referred to the German people's once powerful influence in the intellectual and economic life of the world, forfeited for the time being under a self-confident tyranny that boasts (Dr. Goebbels, on March 19) "we do not have to appeal to the people, we have the army, the police, the wireless, the press, the Nazi organization". He noted the utter disregard by Japan and Italy of moral obligation and their recourse to mass murder, and the strange mutation of Mussolini's principles since 1913, when he rebuked his countrymen for the "stupid orgy . . . in which the Italian press is now letting itself go with mad exaltation. Strong peoples have some sense of measure. Italy, rationalist and militarist, shows that it lacks this sense . . . a miserable war of conquest (the conquest of Tripoli) is acclaimed as if it were a Roman triumph." Another university president, Dr. Sproul of the University of California, speaking on June 30 on "America's Answer to Youth's Appeal", similarly stressed the preponderant importance for our day of safeguarding "freedom and tolerance, respect for the individual, regard for the rights of minorities. . . ."

Science News a Century Ago

J. D. Forbes and Auguste de la Rive

THE enthusiasm shown at the Bristol meeting of the British Association in the experiments of Andrew Crosse, referred to in NATURE last week, was not shared by J. D. Forbes, who shortly after returning from Bristol, on September 26, 1836, wrote to Auguste de la Rive: "The subject of Mr. Cross is, I confess, rather a disagreeable one to me. You will readily enough conceive how much people more conversant with geology than electricity must have been struck by hearing most eloquently expounded a series of experimental discoveries, for they were perfectly original to Mr. Cross, silently prosecuted for many years by a retired country gentleman in Somersetshire, and only elicited by chance in the course of discussion. From the first moment that the matter was mentioned to me, and on every succeeding occasion, I really believe not less than fifty times, I have patiently vindicated the claims of Becquerel, which only require to be mentioned to be acknowledged. I own I felt somewhat indignant on the subject, because having seen Becquerel's magnificent preparations and conversed at great length with him on the subject, I had been led at various times, publicly and privately, for several years, to draw the attention of geologists to one of the very best things ever done for their science. . . ."

Medical Museum at King's College, London

ON September 30, 1836, *The Times* said: "The Society of Apothecaries has lately enriched the various collections in the medical school [of King's College] by the presentation of a large and beautiful series of specimens of the materia medica, being duplicates of those selected from their own collections at Apothecaries-hall. As much care is required in choosing the purest and best specimens, many of which it requires time to procure, it is not expected the collection will be quite complete for many months. A new room has been opened in the college for their now extensive museum of materia medica. The dormitories for the students, fully furnished, and abundantly ventilated, a new medical reading room, as well as dining-hall or refectory, to be opened early in October, are among the newest improvements in the college."

Sturgeon's *Annals of Electricity*

IN October 1836 appeared the first number of the periodical "The Annals of Electricity, Magnetism, and Chemistry and Guardian of Experimental Science, conducted by William Sturgeon, Lecturer on Experimental Philosophy at the Honorable East India Company's Seminary, Addiscombe, etc., and assisted by gentlemen eminent in these departments of philosophy". The greater part of the number

appears to have been written by Sturgeon himself. There were articles on the galvanometer, electro-chemical action exercised by simple metals in fluids, electro-pulsation and electro-momentum, a letter from Sturgeon to Faraday and a description of an electro-magnetic engine for turning machinery.

Sturgeon was undoubtedly one of the most industrious men of science of his day. He was born in a village near Kirkby Lonsdale, Lancashire, in 1783, and at thirteen years of age he was placed under a shoemaker who starved and ill-used him; at nineteen he entered the militia, at twenty-one became a private in the Royal Artillery and at thirty-seven left the army with a pension of a shilling a day. He had meanwhile taught himself mathematics, Greek and Latin, and begun his electrical experiments. On leaving the army he set up as a bootmaker at 8 Artillery Place, Woolwich. In 1823 he began contributing to the *Philosophical Magazine*, and in the following year, mainly through Olinthus Gregory, S. H. Christie and Peter Barlow, was appointed to the lectureship at Addiscombe. He was also connected with the Adelaide Gallery of Practical Science in Adelaide Street, London, and in 1840 removed to Manchester to superintend the Royal Victoria Gallery of Practical Science, an institution which, however, had but a short life. His writings were very numerous and to him we owe the construction of the first soft-iron electro-magnet. In his later days he felt the pinch of poverty, and a year before his death in 1850, he was granted a Civil List Pension of £50 a year.

Darwin's Reflections on Travel

ON October 2, 1836, H.M.S. *Beagle* arrived at Falmouth after a voyage which had taken her round the world and had lasted nearly five years. In concluding his "Journal of Researches", Darwin gave a short retrospect of "the advantages and disadvantages, the pains and pleasures, of our circumnavigation of the world". In concluding this retrospect, he said: "it appears to me that nothing can be more improving to a young naturalist, than a journey in distant countries. It both sharpens, and partly allays that want and craving, which, as Sir J. Herschel remarks, a man experiences although every corporeal sense be fully satisfied. The excitement from the novelty of objects, and the chance of success, stimulate him to increased activity. Moreover, as a number of isolated facts soon become uninteresting, the habit of comparison leads to generalisation. On the other hand, as the traveller stays but a short time in each place, his descriptions must generally consist of mere sketches, instead of detailed observations. Hence arises, as I have found to my cost, a constant tendency to fill up the wide gaps of knowledge, by inaccurate and superficial hypotheses.

"But I have too deeply enjoyed the voyage, not to recommend any naturalist, although he must not expect to be so fortunate in his companions as I have been, to take all chances, and to start, on travels by land if possible, if otherwise on a long voyage. He may feel assured he will meet with no difficulties or dangers, excepting in rare cases, nearly so bad as he beforehand anticipates. In a moral point of view, the effect ought to be, to teach him good-humoured patience, freedom from selfishness, the habit of acting for himself, and of making the best of every occurrence. In short, he ought to partake of the characteristic qualities of most sailors. . ."

Societies and Academies

Paris

Academy of Sciences, August 3 (*C.R.*, **203**, 353–392).

EMIL J. GUMBEL: The extreme periods between radioactive emissions. Comparison of theory and experiment for polonium. The good agreement between the frequencies found and the probabilities proves that the extreme periods between the radioactive emissions follow the theory of the greatest value.

S. LECHNITSKI: Some problems of elasticity of anisotropic bodies.

KYRILLE POPOFF: The solution of the differential equations of the pendular movement of a projectile.

DANIEL CHALONGE: A remarkable variation in the spectrum of γ-Cassiopeia. An appreciable increase in the brightness of this star was noted on the night of July 25–26 last: spectroscopic observations made on July 30–31 and August 1–2 showed a change in the spectrum mainly due to a large increase in the emission of Balmer lines.

RENÉ RIVAULT: Experimental researches on the propagation of short electric television waves ($\lambda = 41{\cdot}5$ metres, $\lambda' = 74$ metres).

MAURICE DODÉ: The thermochemistry of the nitrites of the alkalis and alkaline earths.

BASILE FEDOROFF: The conductivity of the double sulphates of the magnesium series in aqueous solution. Eight double sulphates have been studied. Except at very low concentrations, the double salt is always less dissociated than the simple salts.

CLÉMENT COURTY: The increase of the magnetism of ferric oxide by ignition in the presence of ash-free filter paper.

GABRIEL BERTRAND: Observations on the preceding communication concerning the discovery of iron in plant ash.

GEORGES JOURAVSKY: The optical properties, densities and degree of corrosion of the alumino-magnesium titanomagnetites.

HENRI RINGARD and ANDRÉ DUPARQUE: The microscopic characters of Courrières coals.

FERNAND JACQUET: The middle Eocene with Nummulites of Senegal.

YVES MILON: The fossil *yardangs* of Saint-Pierre-la-Cour (Mayenne).

CONRAD KILIAN and THÉODORE MONOD: The discovery in the western Sahara of fossil micro-organisms forming an indicator as regards age and marine nature of the Koundeloungou (Congo) series.

LUCIEN CAYEUX: Remarks on the preceding note.

JEAN DUFAY: The Huggins bands in the spectrum of the blue sky and the temperature of atmospheric ozone.

PAUL BUDKER: The destruction and fall of the mandibular teeth in *Squalus*.

JEAN JACQUES BOUNHIOL: Metamorphosis after ablation of the *corpora allata* in the silkworm (*Bombyx mori*).

STIG VEIBEL and FRANCISKA ERIKSEN: The influence of aglucone on the velocity of hydrolysis of the β-glucosides by emulsine.

August 10 (*C.R.*, **203**, 393–416).

LUCIEN DANIEL: Acquired heredity in bulb producing leek.

DAVID BELORIZKY: Some peculiarities of Nova Lacertæ, 1936. The radiation of this star is monochromatic and almost entirely concentrated in $H\alpha$ radiation.