so that it may be distributed to those most entitled to it, and placed on sale like other government publications.

E. W. ALLEN.

SCIENTIFIC JOURNALS AND ARTICLES.

THE *American Journal of Science* for July contains the following articles:

'Energy of the Cathode Rays,' by W. G. Cady.

'Volcanic Rocks from Temiscouata Lake,' Quebec, by H. E. Gregory.

'Interpretation of Mineral Analysis: a Criticism of recent Articles on the Constitution of Tourmaline,' by S. L. Penfield.

'Studies in the Cyperaceae, No. XIII,' by T. Holm.

'Titration of Mercury by Sodium Thiosulphate,' by J. T. Norton, Jr.

'Selenium Interference Rings,' by A. C. Longden.

'Carboniferous Bowlders from India,' by B. K. Emerson.

'New Bivalve from the Connecticut River Trias,' by B. K. Emerson.

'Statement of Rock Analyses,' by H. S. Washington.

'String Alternator,' by K. Honda and S. Shimizu.

'Action of Light on Magnetism,' by J. H. Hart.

THE June number of the *Bulletin of the American Mathematical Society* contains the following articles: 'Report of the April meeting of the Society,' by the Secretary; 'Report of the April meeting of the Chicago Section,' by T. F. Holgate, Secretary of the Section; 'On the history of the extensions of the calculus,' by J. G. Hagen; Burnside's 'Theory of groups,' by G. A. Miller; Shorter notices: D'Ocagne's 'Treatise on nomography,' by F. Morley; Barton's 'Theory of equations,' by J. Maclay; Rice's 'Theory and practice of interpolation,' by E. W. Brown; Braummühl's 'History of trigonometry,' and Boyer's 'History of mathematics,' by F. Cajori; and Frischauf's 'Series in circular and spherical functions,' by W. B. Ford; 'Notes'; 'New Publications.'

The July number, concluding Vol. VI. of the *Bulletin*, contains: 'Some remarks on tetrahedral geometry,' by H. E. Timerding; 'On singular transformations in real projective groups,' by H. B. Newson; 'On groups of order 8 !/2, by Ida M. Schottenfels; Lobachevsky's Geometry' (second paper), by F. S. Woods; 'Burkhart's Elliptic functions,' by J. Pierpont; 'Erratum'; 'Notes'; 'New Publications'; 'Ninth annual list of papers read before the Society and subsequently published,' 'Index.'

DISCUSSION AND CORRESPONDENCE.

THE INTERNATIONAL CATALOGUE OF SCIENTIFIC LITERATURE.

TO THE EDITOR OF SCIENCE: The following criticism has been sent to me of the last schedule published by the Royal Society for the International Catalogue:

"Take for example, paleontology, the introduction states that the zoological subdivisions are identical with those of the zoological scheme, but so hasty is the compilation that the old scheme of three years ago has been republished quite forgetful of the fact that it was long since given up and replaced by a totally different one. Had one ever classified titles by this scheme, the complete want of accord would have at once appeared. On p. 14 of the zoological scheme is a half page of misprints, which could not have been overlooked had the scheme served for experiments, 'Fauna and Flora' stands as a division of human anatomy, evidently through some carelessness of copying; topics are wanting in abundance and the same topic recurs 3 or even 4 times. Indeed in spite of all the good counsel given and the two years that have been taken, these last schemes simply swarm with errors, from fundamental ones to mere careless misprints * * *."

It hardly seems possible that this schedule, so regardless of the best principles of bibliographical work, and so illogical in its classification can receive the general support which is necessary to make it a financial success. We all welcome the idea of international co-operation as the only means out of the *impasse* of over crowded literature, but before we can combine we must have put before us a scheme which is practicable.

HENRY F. OSBORN.

THE CALLOSITIES UPON HORSES' LEGS.

TO THE EDITOR OF SCIENCE: I shall feel very much obliged to any of your readers who will furnish me with any hypotheses concerning the origin of the callosities upon the legs of horses and mules, and upon the fore-legs of

asses. The idea that they are the remnant of the inner toe is, in my opinion, untenable, chiefly because this toe has been the first to disappear in all ungulates.

LAWRENCE IRWELL.

BUFFALO, N. Y., July 15, 1900.

TRANSMISSIBILITY OF ACQUIRED CHARACTERS.

TO THE EDITOR OF SCIENCE With reference to the difficulties in the way of such heredity mentioned by Professor Sedgwick in his address printed in your issue of the 6th of this month, would not modifications induced by diet during a whole lifetime have the greatest chance of being transmitted and becoming permanent in the race? By such experiment would not the reproductive cells be equally affected with the rest? These modifications could be influential during the whole lifetime, commencing even in the embryonic and antenatal stages. Thus the influence of ancestral and homochronous heredity would be, as far as possible, obviated. To learn if such a test has ever been attempted, and for any particulars, I should be much obliged.

C. G. S.

23 UP. BEDFORD PLACE, LONDON, W. C.
June 29, 1900.

CURRENT NOTES ON METEOROLOGY.

REPORT OF THE CHIEF OF THE WEATHER BUREAU.

VOL. I. of the annual Report of the Chief of the Weather Bureau has been issued. This volume contains the monthly and annual summaries for 1898, with the customary administrative report. In the latter, special attention is given to the West Indian service of the Weather Bureau. The following points seem worthy of note. In connection with the river and flood service it is stated that "during the next two years, if sufficient funds are available for the purpose, it is proposed to prepare a comprehensive work on the entire navigable water régime, giving a complete history of all river stations, elevations above tide-water, rate of flow of water, and data for flood forecasting." The health of the men in the West Indian division is stated to have been remarkably good. "Although almost all have suffered more or less from tropical fevers, and the debilitating effects of the climate, yet the continuity of observation has been interrupted by sickness only at Santiago."

THE AURORA AUSTRALIS.

IN *Ciel et Terre* for May 16th, Arctowski publishes a short paper on his observations of the aurora australis made during the recent trip of the *Belgica*. There were in all 62 observations. The phenomenon generally appeared between 7 p. m. and 2 a. m., the maximum intensity coming most frequently between 9 and 10 p. m. The maximum frequency did not come during the months of polar night, and the intensity was manifestly greatest at the equinoxes. Arctowski finds a striking similarity in the appearance of the aurora borealis as observed by Nordenskiold on the *Vega* in 1878–79, and described by him, and the aurora australis as observed on the *Belgica* expedition.

R. DEC. WARD.

HARVARD UNIVERSITY.

NOTES ON OCEANOGRAPHY.

THE DANISH 'INGOLF' EXPEDITION.

SINCE the publication of Mohn's great work on the results of the Norwegian Atlantic Expedition, the most important contribution to our knowledge of hydrographic conditions in the North Atlantic has doubtless been Knudsen's recent memoir (The Danish Ingolf Expedition, Vol. I., Part 1, Copenhagen, 1899). Knudsen has made a substantial improvement on the Negretti-Zambra deep-sea thermometer. While salinity determinations are of first importance in establishing the relations between the waters of the Gulf Stream Drift and Arctic currents, it is interesting to note that he did not use the hydrometer except as a check, but relied exclusively on the use of the chlorine coefficient, calculating the total salts from the amount of chlorine found in each water-sample by titration. He agrees with Pettersson that this convenient method gives the most accurate results. The gas analyses are especially numerous and valuable. The content of nitrogen has been used, in connection with temperature, to distinguish polar and Gulf stream water; the degree of 'supersaturation' of the surface-water with oxygen has been found to be in pro-