

error of the measurements, but that this can be done by a formula which he proposes. (2.) "On the Sounds produced by Heated Tubes, and on the Vibrations of Air in Pipes of various Forms," by C. Sondhaus (pp. 53 to 76). Many experimenters must have observed the frequent production of a musical tone when a bulb has been blown at the end of a rather short and narrow glass tube, the sound beginning just as the tube with the still hot bulb is removed from the lips. This phenomenon formed the subject of an investigation by the author twenty years ago, and he now returns to it in a paper which is to be concluded in the next number of the *Annalen*. The principal result which he now publishes is that when the dimensions of bulb and tubes are properly proportioned, similar tones can be obtained with heated glass bulbs from which two open tubes proceed in opposite directions. He also gives an empirical formula which expresses approximately the pitch of the tones obtained in terms of the dimensions of the bulbs and tubes; but as this formula does not seem to be based on any physical explanation of the way in which the sounds are produced, and as it takes no account of temperature, the agreement between its results and those of observation must be considered as at least to some extent accidental. Perhaps the remainder of the paper may give further explanations on these points. (3.) "On Chromates," by C. Freese (pp. 76 to 88), to be concluded in the next part. (4.) "Thermo-chemical Investigations" (continued), by Julius Thomsen (pp. 88 to 114). This section of Professor Thomsen's researches relates to the acids of nitrogen, phosphorus, and arsenic. The thermo-chemical behaviour of these acids, when neutralised with caustic soda, appears to agree in the main with the commonly-received views of their basicity founded upon their chemical properties. (5.) "Further Researches into the Development of Electromotive Force between Liquids," by Jacob Worm-Müller (pp. 114 to 144). Among other results the author arrives at the following remarkable conclusion: "Solutions of acids and alkalis in equivalent proportions (that is such that equal volumes of the solutions neutralise each other) and of the salts formed by mixing equal volumes of these solutions, do not give rise to electric currents when connected so as to form a circuit." This paper also is to be concluded in the next number of the *Annalen*. (6.) "Researches in Electrical Dust-figures," by Wilhelm von Bezold (pp. 145 to 159). (7.) "On the Law of Formation of Kundt's Dust-figure," by Theodore Karrass (pp. 160 to 168). (8.) "On an Electrophorus-machine for Charging Batteries," by Peter Riess (pp. 168 to 172). The author describes a modification of Holtz's electrical machine, which renders it applicable for charging Leyden batteries to a high tension. (9.) "On the Measurement of the Absorption of Light by transparent media by means of the Spectroscope," by C. Vierordt (pp. 172 to 175). The author's method of measurement consists essentially in diminishing the intensity of each part of a normal spectrum, by means of smoked glasses of known absorptive power and the partial closing of the slit of the spectroscope, until it is identical with that of the light transmitted by the medium to be examined. (10.) "An Observation on the Induction-spark," by Dr. A. Weinhold (p. 176).

In the *Journal of Botany* for August, the original articles relate almost entirely to extra-English botany, with the exception of the conclusion of Mr. Worthington Smith's *Clavis Agaricinarum*, which forms an important contribution to the literature of cryptogamic botany.

In the *Proceedings of the Asiatic Society of Bengal* for June are three articles on the Andamanese, the most important of which is by Surgeon Francis Day. He estimates the number now living on the island as probably not much over 1,000, divided into several tribes, which have distinct dialects, so that members of the Little Andamans are scarcely able to understand those of the South Andamans. Their language is very deficient in words; many English and Hindustani words are now beginning to be incorporated in it; numerals are entirely absent. They are anything but prolific, and appear to be gradually dying out from excess of deaths over births. Mr. Day only saw one woman who had as many as three living children; during one year thirty-eight deaths were reported, and only fourteen births among the families living near the European settlements; few appear to live to a greater age than forty, and they are subject to a variety of diseases. We hope to return to this article again. Dr. G. von Martens contributes "Notes on some Javanese Algæ." The remaining articles in the number are philological.

SOCIETIES AND ACADEMIES

PARIS

Academy of Sciences, August 8.—Papers were read on the relation between the specific heats and the coefficients of dilatation of any body, by M. Phillips, and on the decimal division of the quadrant, by M. A. d'Abbadie, in which he communicated two letters on the subject from M. Nadau and Prof. Airy; and MM. Jamin and Richard contributed some observations on the determination of the relation between the two specific heats of gases.—M. Jamin replied to the two notes by M. Sainte-Claire Deville on July 18th, and entered again at length into the subject of the variations of temperature produced by the mixing of two liquids.—M. Laborde contributed a note on some new experiments on Holtz's electrical machine.—M. Elie de Beaumont presented, on behalf of M. Delesse, a lithological map of the embouchure of the Seine.—A note by MM. Rabuteau and Peyré was presented by M. Ch. Robin, on the poisonous effects of the m'boundou or icaja, a poison used at the Gaboon. The poison used was extracted chiefly from the bark, a small quantity also from the root. The experiments showed that the poison is extremely rapid; but that its fatal effects can be prevented by artificial respiration; the symptoms are in some respects similar to those produced by strychnine.—A letter was read from M. Lichtenstein to M. Dumas, on a means of preventing the irruption of the *Phylloxera vastatrix* in vines not yet attacked. The proposed plan is simply by destroying carefully, from May to August, all the branches on which the winged form of the insect has made its appearance.—A short note was also presented by M. L. Laliman, on a variety of vine (of the American species *V. astivalis*) not subject to the attacks of the *Phylloxera*.

BOOKS RECEIVED

ENGLISH.—Lectures on Art: J. Ruskin (New York: Wiley and Son).—The Laws of Verse: J. J. Sylvester (Longmans).—The Wind in his Circuits: R. H. Armit (J. D. Porter).—Matter for Materialists: T. Doubleday (Longmans).—The Book of the Roach: G. Fennell (Longmans).
FOREIGN.—(Through Williams and Norgate)—Etudes sur la maladie des vers à soie: L. Pasteur.—Streifzüge (landwirthschaftliche) in Frankreich u. Algerien im Jahre 1862-68: A. Petzhold.—Leçons de Chimie, années 1868-69, Déhéraïn, &c.—Mineralogie der Vulcane: Dr. C. Landgrebe.—De l'enseignement supérieur en Angleterre et en Ecosse: J. Demoycot.—Zonula ciliaris: Dr. F. Merkel.—Deutsche Vierteljahrsschrift für öffentliche Gesundheitspflege: C. Reclam.—Prodromus Floræ Hispaniæ, Vols. 1 and 2: M. Willkomm.—Algæ japonicæ Musæi botanici Lugduni-Batavi: W. F. R. Süringer.—Die Osteologie und Myologie von Sciurus vulgaris: C. K. Hoffman.

CONTENTS

PAGE

MR. DARWIN AND THE FRENCH INSTITUTE	309
THE ICE-AGE IN SWITZERLAND. By ARCH. GEIKIE, F.R.S.	310
PRIMITIVE MAN	311
OUR BOOK SHELF	312
LETTERS TO THE EDITOR:—	
School Natural History Societies.—T. B. PRESTON	313
Our Dublin Correspondent and the Parturition of the Kangaroo	313
The Horse-Chestnut.—M. W. MOGGRIDGE	313
The Rotundity of the Earth	314
Cuckow's Eggs.—ED. LAYARD	314
Special Modification of Colour in the Cushat.—W. C. MCINTOSH	314
Colour Blindness.—R. B. HAYWARD	314
The Source of Solar Energy.—R. A. PROCTOR	315
Müller's Physics and Meteorology	315
Colour of Water.—J. J. MURPHY, F.G.S.	315
Water Analysis.—J. ALFRED WANKLYN	315
Suckers from the Apple-Tree.—REV. C. J. ROBINSON	315
A Natural Fernery.—H. REEKS	316
The Science and Art Department	316
The intended Engineering College.—Prof. G. C. FOSTER, F.R.S.	316
OUR SALAD HERBS. By the Rev. C. J. ROBINSON	317
TESTIMONIAL TO PROF. MORRIS, F.G.S.	317
WHEAT RUST AND BERBERRY RUST. By ALFRED W. BENNETT, F.L.S., and the Rev. M. J. BERKELEY, F.L.S. (With Illustrations.)	318
NOTES	320
PAPERS ON IRON AND STEEL. I. A VERY COSTLY AND VEXATIOUS FALLACY. By W. MATTIEU WILLIAMS, F.C.S.	322
ON THE NATURAL LAWS OF MUSCULAR EXERTION. By Prof. the Rev. SAMUEL HAUGHTON, M.D., F.R.S.	324
PROF. ABEL'S CONTRIBUTIONS TO THE HISTORY OF EXPLOSIVE AGENTS	326
SCIENTIFIC SERIALS	327
SOCIETIES AND ACADEMIES	328
BOOKS RECEIVED	328

ERRATA.—Page 296, first column, lines 10 and 11 from bottom, for "blosz Erscheinung" read "blose Erscheinung."—Page 308, first column, line 14, for "Phyllosetera" read "Phylloxera."