

standard rules of beryl. He remarks that beryl, when heated, dilates in a direction perpendicular to the axis, and contracts in the direction of the axis; there will consequently be an intermediate direction in which no dilatation takes place, and in this he proposes to cut his standard rules. Some observations on the constitution and movement of glaciers, by MM. C. Grad and A. Dupré, were presented by M. Leverrier. The authors investigated the structure of the ice of the great Aletsch and other glaciers at different points of their course, and found that in all cases the size of the grains or constituent elements of the ice gradually increased from above downwards. They also noted the movements of the Aletsch glacier at those points of its course, and the amount of surface loss which it underwent by the action of the sun in the latter part of August, when their observations were made. A note by M. J. B. Baille on the heat reflected by the moon, was presented; the author confirms the results obtained by MM. Piazz Smyth, Marié Dacy, and Lord Rosse. A notice of a new synthesis of guanidine, by M. G. Bouchardat, was presented. The author, in repeating M. Natauson's experiment for the production of urea by the action of gaseous ammonia upon oxychloro-carbonic gas, found that other amides of carbonic acid were produced, especially guanidine, the sulphate of which he obtained crystallised. Melanuric and cyanuric acids are also produced. M. C. Dareste communicated a note on arrest of development regarded as the proximate cause of most simple monstrosities; M. Bonchut read a note on hydrate of chloral, with especial reference to its physiological action, which led to some remarks by MM. Bussy and Dumas. An extract from a report by M. Gaudrée Boilleau on the recent earthquakes, and a fresh outbreak of yellow fever at Peru, was read, a note on the etiology of goitre, by M. D. Brunet; a note on the phosphorescence of the sea, by M. Duchemin; and a note on the causes of the mortality of new-born infants and on the means of restraining it.

## PRAGUE

Royal Society of Bohemia—Natural Science Section, October 6.—M. E. Weyr read a memoir on the conic sections inscribed or circumscribed upon a triangle, having a double contact with a fixed conic section.

October 27.—Dr. E. Schöbe read a paper on the discovery of the terminations of the nerves in the wings of the Chiroptera. The well-known power possessed by bats of finding their way through numerous small obstacles, even when blinded and deafened, has led several anatomists to seek for the nervous apparatus by which this great sensibility is attained. Cuvier described a complete nervous network in the wings; but what he took for nerves, turn out to be elastic trabeculae. Leydig and Krause have also published upon this subject. The author describes the wings in several genera of bats as composed of a duplication of the general integument, in which the two layers of cutis become amalgamated. The epidermis consists of a single layer of lineagonal cells, and the *rete Malpighianum* of two layers of cells, the upper ones large, polymorphic, and filled with colouring matter. The cutis contains very complete systems of elastic trabeculae and striated muscles, and a vascular system, which were described in detail by the author, as also the hair-follicles, each surrounded by 7 or 8 sebaceous glands, and a hydrotic gland. Each wing has from 8,000 to 10,000 hairs, with their glandular systems. The nervous system is very highly developed and delicate. The principal branches follow the direction of the great vessels; the last ramifications, composed of from 8 to 12 fibrillae, issue from the neurilemma, and form bundles, each consisting of 4 fibrillae. Each bundle runs to a hair-follicle; two of its fibrillae surround this in a loop, and terminate in a stratiform, *terminal papilla*, formed by the twisting of the fibrillae into a ball; the other two interlace with the free fibrillae of adjacent follicles, and form an extremely delicate terminal nervous network. The terminal papillae are compared by the author to those in the human skin; he has sought and found papillae also in the mouse, shrew, and mole. Dr. A. Fritsch announced the discovery of a new reptile, or batrachian, in the coal of Nyran, in the south-west of the carboniferous basin of Pilsen. The head is triangular, less elongated than that of *Archegosaurus*; the orbits are large; the lower jaw furnished with denticles; the vertebrae numerous, very close and equal, and the anterior limbs slender, and but little developed. The animal was probably about a foot in length. It is compared by the author with the well-known *Proteus anguinus* (= *Hypochthon Laurentii*).

SCHAFARIK

## DIARY

## THURSDAY, NOVEMBER 11.

LONDON INSTITUTION, at 7.30.—On Architecture, or the Fine Art of Building: Prof. Robert Kerr.  
ZOOLOGICAL SOCIETY, at 8.—On the Anatomy of the Aard-Wolf (*Proteles cristatus*): Prof. Flower, F.R.S.  
LONDON MATHEMATICAL SOCIETY, at 8.—General Meeting at Burlington House.

## FRIDAY, NOVEMBER 12.

ASTRONOMICAL SOCIETY, at 8.

## MONDAY, NOVEMBER 15.

LONDON INSTITUTION, at 4.—Elementary Physics: Prof. Guthrie.

## TUESDAY, NOVEMBER 16.

STATISTICAL SOCIETY, at 8.—Inaugural Address by the President: W. Newmarsh, F.R.S. Report on the International Statistical Congress of 1869: Mr. Samuel Brown.  
INSTITUTION OF CIVIL ENGINEERS, at 8.—Discussion on Mr. Gandard's Paper on the Strength and Resistance of Materials; and, time permitting, Public Works in the Province of Canterbury, New Zealand: Mr. Edward Dobson, Assoc. Inst. C.E.

## WEDNESDAY, NOVEMBER 17.

METEOROLOGICAL SOCIETY, at 7.—Lunar Influence upon Rainfall: Mr. J. C. Bloxam, M.R.C.S. On the Summer of 1858: Dr. G. H. Fielding.

## THURSDAY, NOVEMBER 18.

ROYAL SOCIETY, at 8.30.

LINNEAN SOCIETY, at 8.—Review of the genus *Hydrolea*, with descriptions of three new species: Mr. A. W. Bennett, F.L.S.  
CHEMICAL SOCIETY, at 8.  
LONDON INSTITUTION, at 7.30.—Architecture: Prof. R. Kerr.

## BOOKS RECEIVED

ENGLISH.—Cassell's Technical Manuals: Projection, Linear Drawing, Building, Construction (Cassell).—Our Houses (Cassell).—First Book of Indian Botany: Prof. Oliver (Macmillan).—Via Medica: B. Langley (Hardwicke).—Wonders of Italian Art: Louis Viardot (Sampson Low).—What is Matter? Inner Templar (Wyman and Sons).—Essays on Physiological Subjects: G. W. Child (Longmans).—Phenomena and Laws of Heat: A. Cazin, translated by E. Rich (Low).—Thunder and Lightning: W. De Fouvillie, translated by T. L. Phipson (Low).—Wonders of Optics: F. Marion, translated by C. W. Quin.—Tommy Try and what he did in Science (Chapman and Hall).

AMERICAN.—Origin of Genera: E. A. Cope (Trübner).—Annual Report of the Trustees of the Museum of Comparative Zoology at Harvard College.

FOREIGN.—Vierteljahrsschrift der Astronomischen Gesellschaft.—Les Pierres, Esquisses Minéralogique: L. Simonin (Hachette).—Bibliothèque des Merveilles: 4 vols. (Hachette).—Dictionnaire Général des Sciences. Privat-Deschanel et Ad. Focillon.—Untersuchungen über einige merkwürdige Tiergruppen des Arthropoden- und Wurm-Typus: Dr. R. Greff.—Handbuch der Edelsteinkunde: Dr. A. Schrauf (Through Williams and Norgate).

## CONTENTS

	PAGE
DULNESS OF SCIENCE. By F.R.S. . . . . .	43
THE ATOMIC CONTROVERSY . . . . .	44
LECTURES TO LADIES . . . . .	45
GEOLOGY AND AGRICULTURE. By H. WOODWARD. ( <i>With Map</i> ) . . . . .	46
VEGETABLE PALÆONTOLOGY. By J. D. HOOKER. . . . .	48
HARCOURT AND MADAN'S PRACTICAL CHEMISTRY. By H. E. ROSCOE . . . . .	50
BAILLON'S HISTORY OF PLANTS. By D. OLIVER. ( <i>With Illustrations.</i> ) . . . . .	52
FICK ON THE TRANSFORMATION OF FORCE. By M. FOSTER . . . . .	53
OUR BOOK SHELF . . . . .	53
EARTHQUAKE-WAVES IN THE PACIFIC. By R. A. PROCTOR. ( <i>With Illustration.</i> ) . . . . .	54
A NEW FORM FOR SCHOOLS . . . . .	56
THE NOVEMBER SHOOTING-STARS. By R. A. PROCTOR . . . . .	56
PENNY SCIENCE CLASSES . . . . .	57
LETTERS TO THE EDITOR . . . . .	57
NOTES . . . . .	58
ASTRONOMY . . . . .	60
CHEMISTRY . . . . .	61
PHYSICS . . . . .	61
PHYSIOLOGY . . . . .	62
SOCIETIES AND ACADEMIES . . . . .	62
DIARY . . . . .	64
BOOKS RECEIVED . . . . .	64