Sumatra. They are said to be still in use, and differ entirely from early letters in other parts of the island. The natives have a tradition that some descendants of Alexander settled there; and if Nearchus' second expedition, the account of which is lost, reached the Bay of Bengal, the date, Mr. Harrison considered, would agree sufficiently well with the letters. His sailors were principally Tyrians.—Col. Lane Fox read a paper on early modes of navigation, in which he described the various contrivances employed by savage races for transit on the water. Commencing with the simple trunk canoe, the author traced the development of the art of boat and ship-building through the stages of stitched plank canoes, bark canoes, rafts, outrigger canoes, single and double, the double canoe, the variation of hull, the weather platform, the rudder, and the rude sail, and gave the distribution of their many forms and modifications. It was argued that the rude bark float of the Australian, the Tasmanian, and the Ethiopian, the catamaran of the Papuan, the dug-out canoe of the New Zealander, and the built-up canoe of the Samoan, were survivals representing successive stages in the development of the art of shipbuilding, not lapses to ruder methods of construction as the result of degradation; that each stage supplies us with examples of what at one time was the perfection of the art countless ages ago. Some of the more primitive kinds spread over nearly the whole world, whilst others had a more limited area of distribution. Taken together, they enabled us to trace back the history of shipbuilding from the time of the earliest sculptures to the commencement of the art.

Victoria (Philosophical) Institute, Jan. 4.—A paper by Mr. J. E. Howard, F.R.S., entitled "Early Dawn of Civilisation considered in the Light of Scripture," was read by the author.

BERLIN

German Chemical Society, Dec. 14.—A. W. Hofmann, vice-president, in the chair.—Two physiological researches of interest were communicated by Prof. Jaffé, of Konigsberg. Nitrobenzol being poisonous, it appeared reasonable to expect, what experiments fully bore out, that ortho-nitrotoluol, which resists oxidation most completely, should be more poisonous than the two isomeric bodies. *Para-nitrotoluol* is almost without effect upon the health of dogs. Five grains daily were given for several weeks without producing more than a slight inflammation of the mucous membrane of the stomach, and at last jaundice. The urine contained *nitrobenzoic acid* (*para*), but a comparatively small quantity of it only. The rest of the substance had become transformed into *nitrohippuric acid*. This acid was found combined with urea, and therefore insoluble in ether. As in similar experiments, when substituted toluols or benzoic acids had been given to animals, substituted hippuric acids had not been found in the etherial solution, it is not improbable that such acids, though not found, were yet present in the shape of urea compounds. *Para-nitrohippuric acid* constitutes orange prisms, fusing at 129°, and forming well-defined salts with barium and with silver, different from a nitrohippuric acid formerly described by Bertagnini. In the urine of one individual dog a new substance has been discovered by the same *savant* in the following manner:—The alcoholic extract precipitated with H_2SO_4 yielded sulphate of urea, soluble in water, and the sulphate of *a new base*, $C_6H_6N_2O_2$, which combines with one molecule of HCl, but has a sour reaction, and dissolves baryta. It forms prisms, melting and decomposing at 213°. The dog has unfortunately been lost.—Messrs. Forst and Zincke, in re-preparing a product formerly prepared from silver by Limpricht and Schwanert, and described as two substances isomeric with hydrobenzoin and isohydrobenzoin, $C_{14}H_{12}(OH)_2$, have found this opinion to be erroneous; their experiments yielding but a mixture of the two latter bodies. There are, therefore, only two, and not four hydrobenzoins in existence.—M. Wroblewsky described meta-acetyltoluol, prepared from meta-bromotoluol, a liquid boiling at 158°, and yielding isophthalic acid and two isomeric sulpho-acids.—A. Ladenburg has undertaken the useful task of submitting to rigid experiments the opinion generally adopted, that the position of *one* lateral chain in benzol is indifferent with regard to the substance thus constituted; in other words, that no isomeric aromatic bodies can exist with only one lateral chain. He showed this time the identity of ordinary benzoic acid with benzoic acid prepared from phenol, and the complete identity of the three phenols prepared from the three different oxybenzoic acids. The proof will have to be completed by further researches, in which Mr. Ladenburg is still engaged.—Messrs. Michaëlis and Ananoff have undertaken researches respecting the constitution of phosphorous acid, for which they have established the formula $HP = O(OH)_2$. Without entering into details, we can only say that the method consisted in the action of $C_6H_5PCl_4$ on phosphorous acid, when no phosphorous chloride, PCl_3, but only oxychloride, PCl_3O, was formed. They have also prepared a monobasic phenylphosphorus acid, $C_6H_5P = O(OH)H$.—Prof. Nilson, from Upsala, described as the best method for extracting *selenium* the treatment of the flue-dust with cyanide of potassium.—T. Piccard has found in the sperma of the salmon, besides a new base, *protannin*, lately described by Mieschke, also *sarkin* and *guanin*.—C. Schisbler described a volumetric method for determining CO_2 in carbonates without introducing temperature and barometric pressure into the calculus. The method consists in making a "normal" analysis with a pure carbonate and comparing the volume of CO_2 obtained with that of the unknown quantity of CO_2 yielded by the substance analysed the same day.—H. Uppenkamp described hexylic sulphocyanide and isosulphocyanide.—C. Biedermann and L. Ledoux reported on the formation and properties of mesitylenic phenol, $C_9H_{12}O$.—A. W. Hofmann communicated his researches on fractions of beech-tar distilling above 260°. By oxidation they yield a phenolic substance, $C_{11}H_{16}O_3$, in which H_2 may be replaced by Br_2, and a quinone, $C_5H_8O_4$, which takes up H_2 when treated with reducing agents. Prof. Hofmann further reported on the following experiments of Mr. M'Creath:—The action of water on guanidine, CH_5N_3, consisting in the loss of ammonia and the formation of urea; the action of anhydrides has been studied, when it was found that benzoic anhydride acts on guanidine in a similar way, producing ammonia and dibenzoyl-urea.—A. Oppenheim has submitted crystallised pure glycerine to distillation. The boiling point corrected proved to be very constant at 290°. Nearly every manual and dictionary of chemistry contains erroneous data in this respect, although the same number has already been published in 1860 by Mendelejeff.

PARIS

Academy of Sciences, Dec. 28, 1874.—This was the anniversary meeting of the Academy, an account of which appeared in last week's NATURE, p. 178.

BOOKS AND PAMPHLETS RECEIVED

COLONIAL.—On the General Theory of Duplex Telegraphy: Louis Schwendler (Asiatic Society of Bengal).—On Earth Currents: Louis Schwendler (Asiatic Society of Bengal).—Second Annual Report of the Secretary of Agriculture of Victoria (Melbourne, Australia).

FORRIGN.—Anthropologische Beiträge: Georg. Gerland (Max Niemeyer, Halle).—Classification de 160 Huiles et Graisses Vegitales. 2nd Edition: M. Bernardin (Annoot-Brackman, Gand).—A. Dobsinai Jegbarlang: Dr. Krenner Jozef Sandor, Die Eishöhle von Dobschau, Dr. Jos. Alex. Krenner (K. Ungar, Budapest).—Jahrbuch der Kaiserlich-Koniglichen Geologischen Reichsanstalt, Band xxiv. (Wien) —Az Arapály Fumei Obölben: E. Stahlberger (K. Ungar, Budapest) —Essai sur la Vie et les Ouvrages de L. A. J. Quetelet (F. Havez, Brussels).—Verdhandlung des Naturhistorischen Vereins der Preussischen Rheinlande und Westfalens: Dr. C. J. Andrä (Max Cohen und Sohn, Bonn).—Sitzungsberichte der neiderrheinischen Gesellschaft für natur, und Heilkunde zu Bonn (Max Cohen und Sohn, Bona) —Memoires de la Société de Physique et d'Histoire Naturelle de Genève, vol. xxii. Part ii. (Ramboz et Schuchardt, Genève).

CONTENTS

	PAGE
THE GEOLOGICAL SURVEY OF VICTORIA	181
LIVINGSTONE'S "LAST JOURNALS," II.	182
BUCHANAN ON THE CIRCULATION OF THE BLOOD	184
OUR BOOK SHELF:—	
Angell's "Animal Physiology"	185
"The Gardener's Year Book"	186
LETTERS TO THE EDITOR:—	
Absence of Microscopic Calcareous Organic Remains in Marine Strata charged with Siliceous Ones.—HENRY J. CARTER	186
The Constant Currents in the Air and the Sea.—WM. FERREL	186
Mud Banks on Malabar Coast.—HENRY F. BLANFORD	187
Ring Blackbird.—C. M. INGLEBY	187
ON THE MORPHOLOGY OF CRYSTALS. By Prof. N. S. MASKELYNE, F.R.S.	187
TWO REMARKABLE STONE IMPLEMENTS FROM THE UNITED STATES. By CHAS. C. ABBOTT (*With Illustrations*)	190
PROTECTION FOR INVENTIONS	191
FRANCIS KIERNAN, F.R.S.	193
THE RECENT THAW. By W. DE FONVIELLE	193
EARTHQUAKES IN THE PHILIPPINE ISLANDS. By Dr. A. B. MEYER	194
THE TRANSIT OF VENUS	194
NOTES	195
THE PRESENT CONDITION OF THE ROYAL SOCIETY, II.	196
SCIENTIFIC SERIALS	199
SOCIETIES AND ACADEMIES	199
BOOKS AND PAMPHLETS RECEIVED	200