

the relative proportions of the limb-bones, especially in the shortness of the humerus compared with the fore-arm, and in the form of the pelvis, Negro affinities are most strongly indicated.

In speaking of the culture of the Andamanese, of course I only refer to their condition before the introduction of European civilization into the islands. They live in small villages or encampments, in dwellings of simple and rude construction, built only of branches and leaves of trees. They are entirely ignorant of agriculture, and keep no poultry or domestic animals. They make rude pots of clay, sun-dried, or partially baked in the fire, but these are hand-made, as they are ignorant of the use of the potter's wheel. Their clothing is of the scantiest description, and what little they have chiefly serves for decorative or ornamental purposes, and not for keeping the body warm. They make no use of the skins of animals. They have fairly well-made dug-out canoes and outriggers, but only fit for navigating the numerous creeks and straits between the islands, and not for voyages in the open sea. They are expert swimmers and divers. Though constantly using fire, they are quite ignorant of the art of producing it, and have to expend much care and labour in keeping up a constant supply of burning or smouldering wood. They are ignorant of all metals; but for domestic purposes make great use of shells, especially a species of *Cyrene* found abundantly on the shores of the islands, also quartz chips and flakes, and bamboo knives. They have stone anvils and hammers, and they make good string from vegetable fibres, as well as baskets, fishing-nets, sleeping-mats, &c. Their principal weapons are the bow and arrow, in the use of which they are particularly skilful. They have harpoons for killing turtle and fish, but no kind of shield or breastplate for defence when fighting. The natural fertility of the island supplies them with abundance and a great variety of food all the year round, the purveying of which affords occupation and amusement for the greater part of the male population. This consists of pigs (*Sus andamanensis*), which are numerous on the islands, paradoxurus, dugong, and occasionally porpoise, iguanas, turtles' eggs, many kinds of fish, prawns, mollusks, larvae of large wood-boring and burrowing beetles, honey, and numerous roots (as yams), fruits, and seeds. The food is invariably cooked before eating, and generally taken when extremely hot. They were ignorant of all stimulants or intoxicating drinks—in fact, water was their only beverage; and tobacco, or any substitute for it, was quite unknown till introduced by Europeans.

(To be continued.)

THE INSTITUTION OF MECHANICAL ENGINEERS.

THE Institution of Mechanical Engineers held its annual meeting at the house of the Institution of Civil Engineers in Great George Street, Westminster, on the 3rd and 4th inst., under the presidency of Mr. E. H. Carbutt.

The papers brought forward for reading and discussion were: the Third Report of the Research Committee of the Institution on Friction; "Description of the Emery Testing Machine," by Mr. Henry R. Towne, of Stamford, Connecticut, U.S.A.; and "Supplementary Paper on the Use of Petroleum Refuse as Fuel in Locomotive Engines," by Mr. Thomas Urquhart, Locomotive Superintendent, Grazi and Tsaritsin Railway, South-East Russia; the third of which was deferred till the next meeting of the Institute.

The third report of the Friction Committee is on experiments on the friction of a collar-bearing. The general conclusions of the Committee are that this kind of bearing is inferior to a cylindrical journal in weight-carrying power. The coefficient of friction is also much higher than for a cylindrical bearing, and the friction follows the law of the friction of solids more nearly than that of liquids, due doubtless to the less perfect lubrication applicable to this form of bearing compared with a cylindrical one. The coefficient of friction appears to be independent of the speed, but to diminish somewhat as the load is increased, and may be stated approximately at $\frac{1}{20}$ at 15 lbs. per square inch, diminishing to $\frac{1}{30}$ at 75 lbs. per square inch.

In the broad principles of construction on which the Emery system of testing and weighing machinery rests are included two radically new and highly important elements—namely, an arrangement of hydraulic chambers and diaphragms capable of receiving without injury pressures and shocks of great intensity, and of transmitting them simultaneously, without loss from

friction, to a convenient point for the purpose of measuring and recording them, and capable also of reducing them to such lower term of degree as may be desirable; and a means for flexibly uniting a vibrating scale-beam either to a fixed abutment or to another beam of the same system, in such a manner as absolutely to eliminate friction, and to preserve indefinitely the fulcrum intervals or distances precisely as first adjusted, and to resist and transmit all the pressures and shocks to which the fulcrums are subjected, without in the slightest degree impairing their sensitiveness or durability.

The hydraulic construction is such that through it the strain on the specimen is transmitted without loss to a hydraulic chamber containing a thin film of liquid, which is again transmitted through a small copper tube, without loss from friction or otherwise, to a much smaller chamber containing a similar thin film of liquid. The acting area of the liquid in the smaller chamber is less than that in the larger in the proportion in which the load on the specimen is desired to be reduced before it is received upon the beams in the scale-case where it is measured. In the scale-case containing the weighing mechanism, the pressure transmitted from the smaller chamber is received at one end of a system of levers, and measured by means of devices which are shown in detail in the figures which accompanied the paper.

UNIVERSITY AND EDUCATIONAL INTELLIGENCE.

OXFORD.—Among the courses of lectures announced for this Term we may notice the following:—

In Physics, Prof. Clifton is lecturing on Optical Properties of Crystals, and Mr. Selby on Absolute Electrical Units, at the Clarendon Laboratory. At Christ Church, Mr. Baynes lectures on Thermo-dynamics, and on the Transfer of Energy in an Electro-magnetic Field.

The University has made a grant to Mr. Smith, in aid of the Millard Engineering Laboratory, and practical work on the physical basis of engineering is regularly carried on there.

In Chemistry, besides the usual courses, Mr. Veley is lecturing on Thermo-chemistry, and Mr. Marsh on Recent Organic Research.

The work of the Geological Chair is at present being done by Mr. W. W. Watts (M.A. Camb.), who is lecturing for a term in order that Prof. Green may complete his session at the Yorkshire College.

Owing to Prof. Moseley's continued illness, Dr. Hickson is still acting as Deputy Linacre Professor, and is lecturing on the Morphology of the Chordata. Mr. Bourne, who is to assume his post as Superintendent of the Plymouth Marine Station in a month, is lecturing on Embryology, and Prof. Westwood on the Winged Arthropoda.

Dr. Burdon-Sanderson lectures this Term on Nutrition, and Dr. Gilbert on the Rotation of Crops.

In the absence of any Professor of Botany, Mr. J. B. Farmer is conducting the necessary elementary courses.

CAMBRIDGE.—Prof. Adams is appointed one of the four representatives of Cambridge at the 800th anniversary of the foundation of the University of Bologna, in June next.

An additional class-room for students of Mineralogy is to be formed.

SOCIETIES AND ACADEMIES.

LONDON.

Royal Society, April 19.—"The Radio-Micrometer." By C. V. Boys.

The author gave the result of a mathematical investigation made with a view to arrive at the best possible construction of the radio-micrometer already described by him. At the conclusion of the meeting he showed in action an instrument which he had made, having the best proportions, which was both simpler in construction and far more sensitive than the one he exhibited on a previous occasion.

"On the Compounds of Ammonia with Selenium Dioxide." By Sir Charles A. Cameron, M.D., F.R.C.S.I., and John Macallan, F.I.C.

On passing dry ammonia into a solution of selenium dioxide in absolute alcohol, a compound is formed to which the authors have assigned the name ammonium selenosamate, and the formula $\text{NH}_4\text{SeO}_2\text{NH}_2$. It is the ammonium salt of a new