

of the most apparent influence of the jural upon the industrial system, because, in the series to which this article belongs, it will find special treatment from another point of view. I refer to the effect of the law of property on general distribution, and the effect of distribution — through consumption — upon the entire economy of production. What has been said is suggestive rather than conclusive. It leads to the conception that political economy is a constructive as well as a formal study ; that it is a subordinate and not an independent study ; and that, so far as jurisprudence is concerned, not only does the jural system assist in explaining many facts of industrial life, but it may be advantageously used by society in the realization of industrial ends.

HENRY CARTER ADAMS.

ZOOLOGY AT THE COLONIAL AND INDIAN EXHIBITION.¹

ZOOLOGICAL knowledge is of such fundamental importance for the advancement of material prosperity, that the thoughtful visitor to a great exhibition may profitably inquire how high the various colonies now represented at the exhibition estimate a scientific acquaintance with natural objects. It is a matter for congratulation that some of the persons responsible are not of the school of Professor Huxley, so far as that distinguished naturalist believes that men of science are incompetent administrators : the Indian empire has as a commissioner Dr. Watt, a well-known botanist ; the Canadian dominion is represented by the distinguished geologist, Dr. Selwyn ; and the New Zealand court is directed by the eminent zoölogist, Dr. Julius von Haast.

On the whole, the zoölogist will, we fear, be disappointed with the show provided for him. In some of the courts the specimens might have been turned to better account ; in others mere show-cases of brilliant birds, or, still worse, poor collections of common shells and corals, are the only objective signs of an interest in zoölogy. The idea of having a representation of the fauna of a particular district is excellent, and, had it been always well carried out, the present exhibition would, from the naturalist's point of view, have been really admirable. The best illustration of this kind is afforded by South Australia, the worst by the Indian empire. The latter exhibits so much technical skill in detail, that it is really irritating to find the general result so confused and ridiculous ; a rock-snake on a tree, a crocodile on dry ground, are too trying to our patience. South Australia is very good as far as it goes, but

it is not free from the objection to which West Australia and Queensland are still more obnoxious — the fauna of none of these places consists only of birds and mammals.

A most excellent and instructive show is made by New Zealand, the land of the recently extinct *Dinornis*, the wingless *Apteryx*, and the curious, low, lizard-like form *Hatteria*. The Otago university museum is an important contributor, and visitors and experts alike will admire the very beautiful specimens of cartilaginous skeletons which have been prepared under the direction of Prof. T. Jeffery Parker — worthy son of a worthy father. Among the shark-like forms here seen, should be noted especially *Notidanus*, which is remarkable for having its lower jaw, not merely connected with the skull by the upper half of its mandibular arch (as is the case in all pentadactyle vertebrates), but also by the hyoid (as is the case in the great majority of fishes), or for, in other words, exhibiting what Professor Huxley has called the 'amphistylic' mode ; *Callorhynchus*, which is the southern representative of the northern 'holocephalous' *Chimaera* ; and the bony *Regalecus argenteus*, one of the longest of the ribbon fishes, a memoir on which by Prof. T. J. Parker has been lately published by the Zoölogical society of London. Among the birds there stands in a prominent position an excellent skeleton of the gigantic moa (*Dinornis maximus*) ; there is an interesting group of *Apteryx*, as well as some well-stuffed specimens of the avifauna ; the visitor may chance to hear a sheep-farmer dilating on the enormities of the kea parrot. There is a good collection of dried fish, and among the spirit specimens there are a number of species which, having been insufficiently described, will be gladly examined by stay-at-home naturalists. Of the teaching collections of the museum, it need only be said that they show quite as high a standard of preparation as the best to be found in our own country. This is quite the best zoölogical exhibit in the whole show, and the excellent preparation of the octopus is not the only one which may be profitably studied by curators of English museums.

Perhaps the exhibit which comes next in importance is that of Canada, where there is a really fine collection of fish and marine invertebrates, all well and carefully catalogued ; the government of the dominion is to be congratulated on this proof of its interest in natural history. The authorities at home may, perhaps, be inclined to deduce the moral which presses itself on ourselves ; the Canadian government has a department of fisheries, to which, in the year ending June, 1884, \$116,531 were allotted. There are some very fine heads of mammals in other parts of the Canadian

¹ From *The Athenæum*, June 12, 1886.

court; we have reason to know that a catalogue of the birds to be exhibited has been printed off, but the birds themselves do not seem to have yet arrived in England. We imagine that some such accident must have happened also to the exhibits of the Australian museum at Sydney, for this institution, which was well represented at the fisheries, has here a very poor show, which would, indeed, be improved were the specimens named. The finest set in the New South Wales court is the magnificent collection of shells lent by Dr. Cox, who is well known for his interest in zoölogy; the specimens are not named, but the catalogue gives their localities.

The Straits Settlements court is badly lighted, and appears to be cramped for space; this must explain why the really valuable collection of fish made by Dr. Rowell of Singapore has been placed on the wall with an eye rather to decorative effect than to scientific use. Dr. Rowell's collection contains also some good Crustacea, among which we notice a well-preserved example of the palm or robber crab (*Birgus latro*), the air-breathing apparatus of which has been described by Professor Semper.

In the neighboring court of British Guiana, we were most struck with the collection of nests of wasps, bees, and ants; but it is a pity that little information is given as to the species by which they were severally constructed.

In the court of the Bahamas there is a wonderful collection of more than sixty specimens of *Oreaster reticulatus*, which offers the zoölogist an opportunity for making a careful inquiry into the range of variation of this species. There are four, six, and seven rayed forms, as well as the more ordinary quinquiradiated specimens.

In the Barbadoes court there is an exceedingly interesting exhibit in the two specimens of *Holopus rangi*, which are lent by Sir Rawson Rawson. This very rare crinoid, described in 1837 by D'Orbigny, was incompletely known till Dr. Herbert Carpenter gave an account of the three specimens obtained by Sir Rawson when governor of the Windward Islands, and one in the possession of the Museum of comparative zoölogy at Cambridge, Mass., in his report on the stalked crinoids of the Challenger expedition. *Holopus* has been personally seen by so few naturalists, that they will be glad to have an opportunity of inspecting this enigmatic form for themselves; it is appropriately placed in a jar with a specimen of *Pentacrinus muelleri*, and, as that jar has flat sides instead of being round, the visitor will be able to see the specimens free from the distortion which is inseparable from a rounded jar.

In the Natal court there is a large collection of Lepidoptera and other insects in drawers, and a collection of birds which have, we believe, been examined by Captain Shelley, who is an authority on the avifauna of Africa. There is also a large case of insects in drawers in the Straits Settlements court, which have, no doubt, been examined by Mr. Distant.

The dugong in the Queensland court is, if our memory serves us rightly, a finer example than either shown by New South Wales in 1883; here, too, is a fine sawfish. The trophy of mother-of-pearl shells in the West Australian court is impressive. As to the spat of the pearl oyster shown in the Ceylon court, we will only say that the exhibitor is not at one with the authorities of the British museum, or with the specimens exhibited in the shell gallery of the Natural history department of that institution; the small *Avicula vexillum* is not the young of *A. furcata*.

A THEORY OF CRIMINALITY.

IN Italy, during the last few decades, a number of scientific men, mostly physicians, have devoted themselves to a careful study of criminal types. Their point of view is a strictly scientific one: they regard a crime as the expression of a dangerous trait of character. The character is more important than the act. Moreover, the criminal is not a spontaneous, capricious product: he does not stand alone, but belongs to a class. Thus the anthropology of the criminal classes becomes a distinct object of study. Again: criminality is essentially a morbid phenomenon, and is a defect analogous to insanity or idiocy. In this aspect the criminal is a psychological study. To characterize the spirit of this movement in a few words, one may say that it lays stress on the criminal rather than on the crime.

Foremost among the representatives of this view is Dr. Lombroso, the editor of a journal devoted to this movement, and author of a comprehensive work on the defective classes (*l'uomo delinquente*). Dr. Lombroso has recently stated his theory of criminality in a review article (*Nouvelle revue*, May, 1886), and it may be worth while to take advantage of this convenient statement by presenting it to English readers.

In general, one may recognize three types of causes of the outbreaks against the social order,—physical, social, and anthropological. Among the first may be mentioned climate. In the Argentine Republic the sharp changes of temperature favor a revolutionary character in the inhabitants. The season of year influences the amount of crime: crime predominates in the warm months. Of 192