

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 quinquiradiate 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 exhibiter 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

revolutions in Europe, the months of June and July have the largest share; November and January, the smallest. So, too, heat is a factor. Southern countries (Italy, Spain, Greece) have the largest number of revolutions: northern countries (Russia, Sweden, Norway) have the least. Geographical position and other physical causes could be added. As social causes, Dr. Lombroso regards the struggle for supremacy among the various social castes or classes, a disharmony between the existing civilization and the prevalent economic conditions, an opposition between the political forms and the national feeling and needs. Such are the more constant occasions of revolutionary outbreaks, as shown in history. Mere accidental circumstances, such as the appearance of a great leader or writer, must also be considered.

Finally, the following are the prominent anthropological causes: the co-existence of races not readily assimilated, with, perhaps, a tendency to political changes; hereditary anomalies of character, such as criminality and moral insanity; or acquired anomalies, as alcoholism and insanity. All these go to form three classes of political defectives,—criminals by heredity, by habit, and by mental disease. These have furnished the subject-matter to the new science of criminal anthropology.

One must not suppose, that, because these criminals are classed under the insane, they will not be active in political crimes; for though they may be men of small intellect, yet the absence of the restraining power of a well-developed moral sense makes the bridge between thought and action shorter and smoother. A mere fanciful conception of possible crimes will take so strong a hold on their minds that the act itself will follow. More sensible and reflecting criminals would be repelled by the consequences and dangers of the act. In addition to this class of criminals, who become breakers of the peace simply because that happens to be the most accessible method of venting their perverse instincts, there is another class, who are led on by a wild passion for the destruction of the old, and the creation of something new. They need restless activity: their present condition seems the worst possible. As a rule, too, they are very fond of notoriety. They are in love with crime. The pain of others is a keen satisfaction to them: its horror attracts them. The French revolution shows such types. Lejeune made a little guillotine, and used it on the chickens destined for his table. Jean d'Heron wore a human ear as a cockade on his hat, and had others in his pockets. Carrier confessed that the writhings of the priests whom he condemned to torture gave him exquisite pleasure.

The modern socialists, anarchists, and dynamiters no doubt contain an element of these hereditary criminals, who use the political object as a mask for their instinctive tendencies to lawless outbreaks. The socialistic and the criminal types of face present strong resemblances. In some cases the introduction of such a criminal element transforms a purely political organization into a band of outlaws: the Molly-Maguires are an example of this.

All these facts urge the study of these defective classes. Society has a right to defend itself against these enemies of all peace and progress. But the punishment must be directed to the removal of the evil. The born criminal can readily be detected: his craniological peculiarities, the absence of a moral sense, the reckless cruelty of his deeds, point him out. The treatment for these must aim at removing all opportunities of indulging their passions, for meeting others of their kind (for the epidemic contagion of this disease is one of its worst characteristics), for bringing into the world others fated to follow in their footsteps. For their children, houses of correction and careful discipline should be at hand.

The relation between insanity and crime is one both of cause and of effect. Esquirol has shown an increase of insanity and suicides at each outbreak of the French revolution. Lumier declares that the excitements of 1870 and 1871 were the more or less indirect causes of seventeen hundred cases of insanity. This simply means that the same morbid element, tending to pronounced insanity in one direction and to pronounced criminality in another, is brought to the front by a common cause. Very frequently, too, both tendencies can be seen in the same individuals. Marat, for example, had attacks of maniacal exaltation, and a passion for continually scribbling. He had a sloping forehead, was prognathous, had a prominent jaw and high cheek bones, and a haggard eye, all of which correspond closely with the insane type of face. Later his delusion of ambition changed into one of persecution and homicidal monomania. Dr. Lombroso cites case after case, all telling the same story. He includes Guiteau in this list, and agrees with the opinion of an Italian alienist, that his trial was simply 'scandalous.' The real place for such beings is in a much needed institution,—an asylum for insane criminals.

A few words as to criminals who have acquired their sinful traits. Alcohol is the most common cause. This always plays a prominent rôle in political outbreaks: the French revolution is no exception. Here is another great practical problem needing solution.

So very hasty a sketch of an important theory is necessarily unsatisfactory. It may serve, however, to call attention to the fact that a change in our view of crime and criminals seems about to take place.

The several interests involved in this change of view are many and important. When a chemist is called to court to give expert testimony, the law accepts the results of science as final; but when the doctor testifies, it is at once evident that the medical and legal points of view are essentially different, and in conflict with one another. The law is interested only in the question of responsibility, and demands a 'yes' or 'no' when a truly scientific answer cannot be given in that form. A medico-legal case almost always presents strange inconsistencies. The law should certainly be as ready to accept the testimony of science from the doctor as from the chemist, and should remember that they may both be equally valuable though not equally definite. If such views as these urged by Dr. Lombroso ever become the guiding principles of the law courts, a great and beneficial change in the treatment of alleged insane criminals is sure to follow. Our knowledge of these marked classes is becoming sufficiently accurate and scientific to warrant a practical application of these views in the legal trials, and a theoretical appreciation of them in our theories of ethics.

J. JASTROW.

#### ANNALS OF THE CAKCHIQUELS.

THE above forms the sixth volume of the editor's 'Library of aboriginal literature,' and contains a portion of a manuscript termed by Brasseur de Bourbourg, its former proprietor, 'Mémorial de Tecpan Atitlan.' Its language is the Cakchiquel dialect of the wide-spread Maya family: it was composed by various members of the Xahila (a clan or family once ruling among that tribe) during the sixteenth century, and brought into its present form, as Dr. Brinton assumes, between 1620 and 1650. Only that half of the manuscript was published by him, with translation, which refers directly to the legendary and documentary history of the tribe.

There are three ways open for the publication of linguistic manuscripts of this sort. The first is to print the text, *tel quel*, with all its faults and inconsistencies; the second, to emend the faulty text according to the grammatic laws observable in the language, and to place the readings of the original, where they differ from the corrected forms, on the lower margin. A third mode of

*The annals of the Cakchiquels.* By DANIEL G. BRINTON. Philadelphia, Brinton, 1885. 8°.

proceeding, and the most scientific of all, would be to embark for Guatemala, and there to compare the old text with the pronunciation and wording which the actual Cakchiquels would give to it. This would enable the editor not only to present the text in a scientific alphabet, but also to add a correct translation to it.

But none of these three courses was followed by our editor. The inconsistent orthography of the original prompted him to adopt the first two courses simultaneously and eclectically, and thus he succeeded in producing confusion in the text. His excuse (p. 63) is, "I have felt myself free to exercise in the printed page nearly the same freedom which I find in the manuscript. At first, this will prove somewhat *puzzling* to the student of the original. . . . In the punctuation I have also been lax in reducing the text to the requirements of modern standards."

Not less unfortunate than this method is the incorrectness of his proof-reading; for on p. 107 we find the proper name *Vookaok* correctly written, but on p. 110 he prints it *ahauh voo kaok*; the adverb *mahaniok* (p. 66) appears in the vocabulary as *mahanick*; the Greco-English term *allophylic* (p. 196) as *allophyllie*; and in two French quotations from Brasseur's translation he finds himself prodigiously at variance with French accentuation (pp. 197, 206). The appended 'Notes' convey very little information on grammatic or other subjects which we have to know before we can understand the text, and the condition of the vocabulary is very unsatisfactory. We look in vain for the terms *petebal*, *navipe*, *onohel*, *g'anel* (the name of a month); and even some of the frequently occurring numerals, as *vuo-o*, *voo* ('five'), are not entered. The translation is a mere paraphrase full of gaps, and the text as printed does not by any means render justice to its highly interesting contents, which, in their historic importance, are second only to those of the Popol Vuh.

PROFESSORS AYRTON AND PERRY, the English electricians, have accidentally observed that on amalgamation, or coating with quicksilver, brass expands; so that, if one side only is amalgamated, a plate of brass becomes curved. They imagine that this may be the primary cause of the phenomena of the Japanese 'magic mirror,' which has cast on its back a pattern that is quite invisible on the polished face, yet is mysteriously distinct in the patch of light reflected by the mirror upon a screen. Amalgamation would affect the thinner parts made by the pattern more than the rest of the plate, giving the mirror the imperceptible unevenness that becomes plainly apparent in the reflected image.