aux-Coudres, Que., The Can. Field-Nat., Vol. XXXIII, 1919, No. 6, p. 116, *Serapias Helleborine* was the only instance in the Province of an introduced orchidaceous plant that he was aware of. It was brought over by the first settlers, the missioners, the "Médecins du Roi", the nuns, who were far from being "minus habens", as Bro. M. Victorin says, and Helleborine being of medecinal value, the gardens inside the palisades usually contained a supply of the plants, which have persisted on Mount Royal, Montreal Island, to the present day.

(To be concluded.)

DEAN'S BIBLIOGRAPHY OF FISHES

BY A. WILLEY

DR. BASHFORD DEAN'S *Bibliography*, comprising over forty thousand titles, brings the literature of fishes, living and extinct, from lancelets to lungfishes, up to the end of the epochal year 1914. For the first twenty years of the enterprise, from 1890 to 1910, he worked practically alone. Then the American Museum of Natural History, under its distinguished and untiring President, Professor Henry Fairfield Osborn, ever appreciative of disinterested efforts for the advancement of science, came to the rescue and assured the ultimate success of the project.

Dr. Dean has not been an armchair bibliographer nor a fanatical bibliophile, but a great traveller, ransacking the whole world for the titles which are enshrined in three massive octavo volumes. The first volume of seven hundred and eighteen pages, with Authors' Titles A-K, was issued in 1916. The second volume of seven hundred and two pages contains Authors' Titles L-Z and a List of Anonymous Titles; it was issued in 1917.

The third volume, published in 1923, crowns the herculean task. It consists of seven hundred and seven pages and includes a long list of Addenda, a catalogue of Pre-Linnæan Publications, references to general bibliographies, voyages and expeditions, periodicals relating to fish and fish-culture. The eighth chapter is the Subject Index, covering more than three hundred pages, and divided into a Morphological Section and a Systematic Section, the whole concluding with a general index.

As explained in the preface to the first volume, the references, with this bibliography in hand, are simplified; the example given is "Jordan, 1891.4", which means the fourth paper published by David Starr Jordan in 1891. Probably this method could not have been improved upon under the circumstances; but it may be remarked that the Zoological Record effected a great improvement in its annual register by the introduction of serial numbers. As an example we may quote Bruno Hofer's experimental studies on the integumentary sense-organs of fishes, which is number 201 in the Zoological Record for 1908 (Z.R. 1908, 201); in Dean's Bibliography the reference is: "Hofer 1908.1."

In the Addenda in the third volume, there are included some articles later than 1914 by authors who have died and whose bibliographies are completed as far as possible.

Next to the Titles, the most ambitious feature of the work is the Subject Index and in this connection it may be mentioned that wherever an outstanding work has appeared since 1914, such as Dr. Johannes Schmidt's memoir on *The Breeding Places of the Eel* (1922), it has been inserted in the Index. A particularly valuable portion of the Subject Index is that which is devoted to the Fauna of the World (pp. 420-457). If one wants, for example, to consult the references to Tanganyika or Titicaca, it is only necessary to glance at the "Finding Index" and the information is at once forthcoming. Incidentally of course there will be found in these volumes a virtually complete bibliography of Canadian Fishes to 1914.

By applying various simple tests, one may readily be convinced of the high standard of accuracy achieved. Such minor typographical inadvertences as *Malopterurus* for *Malapterurus* are rare indeed; and there is no telling whether in this instance we are not confronted with a "reformed" nomenclature. This marked freedom from errors and omissions is largely due, as Dr. Dean explains, to the very efficient collaboration on the part of his colleagues at the American Museum. The title-pages of the first two volumes bear the name of the late Dr. C. R. Eastman as co-editor. The third volume is edited by Dr. E. W. Gudger, with the co-operation of Mr, Arthur W. Henn. In the preface to this volume. Dr. Dean sets forth very fully how the work was built up. The seven pages of Errata and Corrigenda (pp. 354-360), far from being regarded as a blemish, are calculated to inspire the utmost confidence in the work as a whole; and as often as not the items requiring correction are attributable to ambiguities in the originals. A few others, however, will doubtless be added when a supplementary volume appears in the dim future. Sir

James Emerson Tennet should read Tennent; and Mr. Thomas Southwell who has written on some Ceylon fishes bears no relationship to the Norfolk naturalist of the same name.

The attempt to provide, for the general reader, an epitome of the subject-matter treated of in the enormous literature of fishes would tax the powers of an Owen or a Huxley. Nor would it be possible for anyone to compress our knowledge of the twelve thousand estimated species of fishes within a nutshell. Hardly any other class of the animal kingdom presents such a wealth of adaptation, from ocean depths to river sources, as is to be found among fishes.

Leaving out of consideration for the moment their immense antiquity and their utility, as affording a well-nigh inexhaustible food-supply to mankind, from the earliest prehistoric hunters and fishers to the man in the street of to-day, the vast range of interest which their study evokes may be illustrated by the entries under the names of Sir Humphry Davy, Michael Faraday, Walter Gaskell, and William Patten. There are other equally remote extremes, all bearing their testimony to the influence which the contemplation of the fish type has exercised upon the inquisitive human intellect from ancient Greece to modern America.

For untold ages the American Ganoids, Cyclostomes, and Chimæroids had successfully guarded the secrets of their spawning habits until Bashford Dean, with consummate wizardry, laid them bare. And now, with the completion of his wonderful bibliography, he may be congratulated upon having fairly landed his fish; and it certainly is a big catch.

A word of acknowledgment is due to Dr. Gudger, himself an ichthyologist of note, with many titles to his credit, and imbued with a profound knowledge of ancient and modern fish-lore.

But mere words can hardly do justice to an arduous undertaking such as this, although its merits are conspicuous. It must suffice to add that no zoological library and no biological station can afford to be without Dean's *Bibliography of Fishes* published by the American Museum of Natural History.

THE BLACK-BILLED CUCKOO IN MANITOBA

BY H. H. PITTMAN

BY THE end of May, in Manitoba, one feels that all the migrants have arrived, for the prairie is alive with birds and the air is filled with their calls and songs, but about the second of June another note is heard—loud, clear, ringing over the plains. The Black-billed Cuckoo has arrived and is "telling the world". It is probable that he has been here a little while already, skulking in the bush, for I have found eggs as early as June 6th, but if so he does not commence to sing as soon as he arrives.

The Black-billed Cuckoo is somewhat slovenly in manner and constantly perches with drooping wings, and altogether suggests that he is wearing a suit of feathers a size too large. Compared with a bird of about similar size, such as the Bronzed Grackle, he seems like a raw recruit beside a highly-trained soldier.

I photographed a Cuckoo sitting on five eggs on June 14th, 1923, in a nest among some dead twigs on the trunk of a small poplar in a rather dark thicket of poplar, willow and cherry in south-west Manitoba, and on the 16th she was sitting closely and near to hatching.

On June 17th a great windstorm came up, destroying barns, silos and trees in this district. It tore great branches off my maples, blew a building over and carried away my water-tank, but not far away it tore the roofs off houses, knocked down barns and blew granaries to pieces. This and the storm which came nearly a month later are two of the worst windstorms I have been in for a long time.

All the smaller trees were bent almost flat and the Cuckoo's nest was upset just as she was hatching. On June 19th, when I passed again, the nest was empty, but the Cuckoo rose from the ground and, after a search, I found an egg, some shells and one chick scattered around. The bird had not deserted, but was taking care of her solitary chick upon the ground beneath the nest.

Unfortunately, among wild creatures, any departure from the normal often ends in failure, as it did in this case, for a week later I was unable to find any trace of the young bird or the egg. Some passing weasel or Crow, perhaps, had found the helpless chick and made a meal and the egg, possibly, had been trodden upon by the bush-rabbits and the remains lost among the dead leaves.

Nestlings, as a rule, are not very pretty until they get their feathers, but young Cuckoos are uglier than most birds of their age. Their skin is black and their beaks and feet a bright blue, as though enamelled.