Hornaday's 'Wild Life Conservation in Theory and Practice.' [1] — The lectures published under this title in the attractive volume before us, were delivered before the Yale Forest School, through the efforts of Prof. James W. Toumey and their delivery and publication represent, in the language of the author, the "Awakening of Yale University" to the necessity of aiding by educational methods the preservation of the wild life of America. In his preface Dr. Hornaday says further, "What is needed — and now demanded — of professors and teachers in all our universities, colleges, normal schools and high schools is vigorous and persistent teaching of the ways and means that can successfully be employed in the wholesale manufacture of public sentiment in behalf of the rational and effective protection of wild life. Thus far the educators of this country as a class and a mass have not done a hundredth part of their duty toward the wild life of the United States and Alaska. Let him who doubts this very sweeping statement ask the next young university graduate that he meets how much he has learned in his university about the practical business of protecting wild life."

The five chapter headings are: 'The Extinction and Preservation of Valuable Wild Life'; 'The Economic Value of Our Birds'; 'The Legitimate Use of Game Birds and Mammals'; 'Animal Pests and Their Rational Treatment'; 'The Duty and Power of the Citizen in Wild Life Protection'.

Dr. Hornaday has gleaned his facts from reliable publications and from his wide personal experience and has assembled them in a convincing manner, so as to make clear the economic side of the question. On the matter of practical preservation of wild life he argues in his well known forceful manner, condemning without mercy the "game hog" and all enemies of conservation, pointing out at the same time the duty of the government, the official and the citizen in furthering the work.

Dr. Hornaday's volume will serve admirably as a text book for furthering in other educational institutions the work that the Yale Forest School has inaugurated, or as a handy work of reference for the public in general. We can heartily recommend it as a valuable contribution to the cause with which Dr. Hornaday has for years been so closely identified.— W. S.

Hartert's 'Die Vögel der palaarktischen Fauna.' [2] — This installment covers the remainder of the Aquilidæ, including the Vultures and

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[1] Wild Life Conservation | in Theory and Practice | Lectures delivered before the Forest | School of Yale University | 1914 | By | William T. Hornaday, Sc.D. | Author of "The American Natural History," | "Our Vanishing Wild Life," etc.; | Ex-President of the American Bison Society | with a Chapter on | Private Game Preserves | By Frederic C. Walcott | *vignette* | New Haven: Yale University Press | London: Humphrey Milford | Oxford University Press | MDCCCCXIV. 8vo. pp. 1–240. Price, $1.50 net.

[2] Die Vögel der palaarktischen Fauna. Systematische Uebersicht der in Europa Nord-Asien und der Mittelmeer-region vorkommenden Vögel. Von Dr. Ernst Hartert. Heft IX (Bd. II. 3) seite 1089–1216 mit. 31 Abbildungen. Ausgegeben im Oktober, 1914. Berlin.

begins the Ciconiidæ. Only one new form appears, *Meliërax canorus neumanni* (p. 1165) Arbub, Mereau.— W. S.

Phillips on Experimental Studies of Hybridization among Ducks and Pheasants.[1]— The experiments here described were carried on during the past five years. The species involved were the Mallard, Pintail, Australian and East Indian Ducks; and the Ring-neck, Prince of Wales, Lady Amherst and Golden Pheasants, and the investigations deal mainly with the inheritance of male secondary sex characters.

In domestic birds a number of clearly Mendelizing characters have been demonstrated and sex-linked characters have also been described in canaries, pigeons and domestic fowls. In his experiments with wild species, however, Dr. Phillips found "a very different state of things." "Characters often apparently clear-cut and antagonistic do not segregate clearly." "There is some evidence that in closely related geographical races there is a nearer approach to orthodox Mendelism, but this is never reached, even in back crosses, except occasionally in isolated characters or in the more undifferentiated plumages of the female sex."

Dr. Phillips comes to the conclusion that it is almost certain that the ordinary subspecies of the ornithologist is very far from being a unit variation and that sex-linked inheritance is probably a feature of domestic races in birds. Indeed in species hybrids in almost every feather region the most minute detail of feather pattern and color show the influence of both parental races.

Dr. Phillips' paper is of great importance, showing what many students of systematic zoölogy have long felt, that it is not safe to assume that laws and principles of heredity demonstrated in domesticated strains of animals necessarily prevail in the case of wild species.

Too few of those engaged in experimental breeding have a proper training in systematic zoölogy to appreciate the nature of wild species, and we, therefore, especially welcome publications from an investigator so well informed on both sides of the problem as is Dr. Phillips.— W. S.

Allen on Pattern Development in Mammals and Birds.[2]— Dr. Allen has made a valuable contribution to the subject of coloration, a field by the way which opens up many possibilities for the ornithologist who may care to enter it. In the particular phase of the subject which he has been investigating — pattern development — he shows that pigmentation develops from certain centers, each one covering a very definite area. Loss of strength in a center of pigmentation and consequent failure to cover the entire area, results in a white or unpigmented line or space between this

[1] Experimental Studies of Hybridization among Ducks and Pheasants. By John C. Phillips. Jour. of Experimental Zool., Vol. 18, no. 1, January, 1915, pp. 69–112, ppl. 1–8.

[2] Pattern Development in Mammals and Birds. By Glover M. Allen. American Naturalist, 1914, pp. 385–412, 467–484, 550–566.