

ance, industrial organization, transportation, commercial law, economic resources, and public service. Courses in French, German, and Spanish Correspondence will be offered with the special object of enabling graduates of the school to read and write letters in these languages and to understand the accepted forms of business correspondence. Two of the most important courses to be offered will be entitled respectively: "Corporation Finance" and "Industrial Organization." Among those who have been engaged to lecture on Corporation Finance are Herbert Knox Smith, Commissioner of Corporations in the U. S. Department of Commerce and Labor; Frederick P. Fish; Professor Edwin S. Meade, of the University of Pennsylvania; James F. Jackson, ex-chairman of the Massachusetts Railroad Commission; C. C. Burlingham, of New York, receiver of the Westinghouse Company; Judge C. M. Hough, of the U. S. District Court for the Southern District of New York; F. A. Cleveland, of the New York Bureau of Municipal Research, and G. W. Wickersham, the New York lawyer. Among those who have been engaged to lecture on Industrial Organization are Frederick W. Taylor, ex-president of the American Society of Mechanical Engineers, and a leading authority on factory organization; J. O. Fagan, a signalman employed by the Boston and Maine Railroad, the author of the recent articles in the *Atlantic Monthly* entitled "Confessions of a Signalman," and Russell Robb, of the firm of Stone & Webster, Boston.

One of the most important features of the school will be the practical work required of each student in the summer. The object of this work will be twofold, first, to teach the student from practical experience and observation the elements of business that can not be taught in the class-room, and, secondly, to bring them in contact with the men with whom their life work is to be done. The school does not pretend to graduate men who will begin at the top or high up in their several lines of business. It does aim to teach them how to work and how to apply powers of observation, analysis, and invention to practical business problems.

DISCUSSION AND CORRESPONDENCE

CONCERNING TWO DEFECTIVES

TO THE EDITOR OF SCIENCE: Inquiries from various parts of this country show that the newspapers have given wide publication to a yellow telegram from San José concerning the Lick Observatory. It was reported that the observatory carpenter, going violently insane, had driven the astronomers and a party of visiting students out of the buildings, that the telescopes were at the mercy of his wrath, and that he was overcome and put under restraint at the expense of a struggle. The facts are that the carpenter became mildly insane; that no one left the buildings on his account; that he was watched and could have been apprehended at any time; that he was not near the telescopes; and that he submitted meekly to arrest by the sheriff. A competent jury would probably decide that this mild lunatic was less harmful to the public than the penny-a-liner who took advantage of millions of helpless newspaper readers. Is the Associated Press at the command of such as he?

W. W. CAMPBELL

SORES ON COLTS

TO THE EDITOR OF SCIENCE: Some ten or twelve years ago I had about fifty colts born on my farm. When they were foaled, they appeared without a blemish. But within ten days after, the hair would fall off a spot averaging two inches long and a half inch wide, leaving a raw sore, which would, in the course of ten days, heal over, leaving a scar. Shortly after, a new crop of hair covered the spot, which by its different "sheen" would render the location of the "sore" visible for several months. The location of this sore is invariably in the hollow of the hock joint, upon the external facies of the leg, with the long diameter perpendicular as the colt stands, thus being somewhat diagonal to the Tendo Achilles. Fifteen years of close observation shows it to be an invariable feature of a colt's life in Louisiana. A number of years ago I called the attention of Dr. W. H. Dalrymple, of Baton Rouge, La. (who needs no introduction

from me), to the sore; and he informs me that by his subsequent observations it seems to be universal at least in America. Asiatic horses not yet having been observed in this respect. I feel sure it is a feature of a horse's life universally.

Many times I have amused myself by telling the owner of a colt, when I had informed myself of its age, that "your colt has a sore on each of its hinder legs."

"When did you see it?" replies the owner.

On my rejoinder that "I have never even seen the colt," he would naturally "say remarks."

The attention of biologists is called to this fact, and theories requested—as the writer has none.

L. S. FRIERSON

SCIENTIFIC BOOKS

The Animal Mind. By MARGARET FLOY WASHBURN. New York, The Macmillan Co. 1907. Pp. x+333.

In this book the author has brought together a wide series of facts which represent the main results achieved in the field of animal behavior during the last few years. It is designed both as a text-book in comparative psychology and as a ready and a convenient reference book. The volume will be of untold value to the general scientific reader, and to the comparative psychologist who has confined himself somewhat narrowly to a particular phase of animal behavior.

The material gathered together in this volume has been arranged in a logical and systematic way. The book affords, consequently, easy orientation into any given phase of the field. The style of presentation is clear and readable. It is the hope of the reviewer that this volume may fall into the hands of the general reader and thereby serve as a counter-irritant to a number of books which deal presumably with the "truth about animals." Certainly any one who has had the benefit of ordinary college training can read the book with profit.

Miss Washburn's opening chapters deal intelligently with the difficulties in the way of observing the reactions of animals; with the methods of observing such reactions; with the

methods of interpreting observed facts; and with the evidence for the presence of mind in animals as inferred, on the one hand, from structure and, on the other, from behavior.

In the chapter on the mind of the simplest organisms the author treats first of the structure of the lowest organisms, next of the observed facts about their behavior, and then attempts to construct from these data the kind of mind such organisms must have—if they are conscious. This attempted construction of the mind of lower animals is a somewhat forlorn and hopeless task. The necessity of such a task is felt mainly by those psychologists who think of mind largely in terms of structure.

The chapters dealing with the sensory discriminations in animals are especially well done. Under the heading of Sensory Discrimination: The Chemical Sense, Miss Washburn brings together a vast amount of material taken from the experiments made upon animals ranging from the cœlenterates to the vertebrates. The many research articles dealing with this subject are scattered and inaccessible. The author has done a real service in bringing them together and giving them systematic treatment.

In the chapter on hearing the author, while giving a good résumé of the field, makes the mistake of saying that birds have no cochlea. I quote her in detail as follows (p. 119):

The cochlea is supposed to be the portion of the human ear upon which the power to distinguish pitch differences rest. *Yet birds have no cochlea* [italics mine], though if we grant that animals which produce sound are those which are able to hear them, some birds at least must be capable of pitch discriminations of wide range and great acuteness. The powers of imitation so often evidenced in bird song are proof that this is the case.

Edinger's statement concerning the cochlea in birds is as follows:

The cochlea is only slightly developed in fishes, but in birds it reaches a fair development.¹

Wiedersheim has the following to say concerning the cochlea of birds and reptiles:

¹"Anatomy of the Central Nervous System, etc.," Hall's English translation, 5th edition, p. 91.