There are four plates in the first part of this book, the only pictures it contains; and they are all taken from the work on storms by Blasius. In the 'Scholia' of the second part, there are several papers by well-known meteorologists: some of them are credited to their original place of publication; but several others are appropriated, in a more or less condensed form, with their author's name at the head of each, as if, in distinction to the first, these were written expressly for this book. It may be that the omission of acknowledgment results simply from carelessness; but, in any case, it is not to be lightly excused. Why should not professors demand as much care in these matters from their publishers as from their students?

LETTERS TO THE EDITOR.

Why is water considered ghost-proof?

As a possible partial explanation of the fact referred to by Dr. Edward B. Tylor, in his address before the Anthropological society of Washington (see *Science*, iv. 548, col. 2), of the wide-spread belief among savages 'that water is impassable to spirits,' the obstacle which it presents to dogs in pursuing their prey by scent may be suggested. This latter fact must be well known to most uncivilized races; and the mystery of tracking by scent must furnish a fertile theme for the exercise of the savage imagination, while the scent itself of a human being would be readily attributed to his spirit. Can anthropologists show any 'historical connection' between the fact and the belief? Lester F. Ward.

Hollyhock-disease and the cotton-plant.

The hollyhock-disease has been a bane to European gardeners for ten years past. It is one of the most destructive of plant-diseases; being able to kill young plants within a week from the time of its attack, and making sad havoc wherever it appears. It is a parasitic rust (Puccinia malvacearum Mont.) to be associated with the rusts of wheat and oats, and is not confined to hollyhocks, but attacks many other members of the mallow family, such as the upright mallow in particular, marsh mallow, German Lavatera, the common weed known as Indian mallow or velvet-leaf, and many others. Winter gives a list of twenty-four species.

The disease was introduced into Europe from Chili in 1869, appearing first in Spain. In four years it had spread through France and the southern portions of Germany and England, reaching northern Germany in 1874, and Ireland in 1875. It has also appeared in Australia and the Cape of Good Hope, but has not yet, in all probability, invaded North America. The plant reported under this name from California is doubtless another species, as I am informed by Dr. Farlow, who has examined Californian specimens, although not those of the original collector. The mention by Burrill of its introduction into this country is an error, as I have learned from the author. A disease sometimes spoken of in American journals under this name is due to an entirely different cause.

Its introduction from Europe, which is most likely to occur through the importation of hollyhock-seeds, should be guarded against. But a still greater interest attaches to the disease in regard to its possible relation to the future of the cotton industry. The cotton-plant is a member of the mallow family, and, so far as one may judge *a priori*, would fall a ready prey to the disease. It occurred to me to obtain some disease-spores from Europe, and test their growth on cotton; but, fearing the disease might escape from my control, I finally interested my friend, Mr. Charles B. Plowright of King's Lynn, Eng., in the subject, who offered to undertake the necessary experiments.

Mr. Plowright reports, under date of Nov. 26, as follows:—

"Six young cotton-seedlings were, on July 12, infected with germinating-spores of Puccinia malvacearum. The plants were quite young, and the spores were applied to the cotyledons. No result.

"Six young cotton-plants which possessed true leaves were, on June 19, infected with P. malvacearum. No result. June 29, infected same plants again. No result.

"In July these plants were planted out in the garden; and beside them a healthy specimen of Malva sylvestris was also planted. At the beginning of August, four small Malvae, affected with the Puccinia, were planted so near the cottons and healthy mallow that the diseased foliage of the one touched the healthy foliage of the other.

"Aug. 20. The healthy mallow has become affected with the Puccinia: the cottons have not. The plants were left growing together to the end of summer, but the cotton-plants remained free from the Puccinia until they died from the cold of autumn some time in October."

It is a relief to find that our apprehensions regarding the dire consequences that might follow the introduction of this destructive rust are without foundation, so far as the cotton-plant is concerned. The mallow family is divided into two tribes; the first including the true mallows, and the second the rose mallows. Among the best-known members of the latter are the shrubby Althaea, okra, and cotton. I am unable to find any record of any of this tribe taking the disease, and it is probable that the true mallows only are subject to it. J. C. Arthur.

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Military cetology.

In the exhaustive essay upon brush-making, by Capt. A. L. Varney, in the last report of the secretary of war (vol. iii. p. 190), I find, in connection with much information of interest to the zoölogist, some remarks upon cetaceans which are unique in their way, and show how dangerous it is for one unacquainted with a subject to attempt to instruct others therein. After stating that "whalebone, or baleen, is a horny substance, consisting of fibrous laminae *laid lengthwise along the upper jaw of the whale*," our author proceeds to give the following information about the order Cetacea in general:—

"Zoölogically, whales, or mammalia of the cetacean order, are divided into two great families,—'blowing' cetacea, so called from the habit of spouting water through the nasal openings or spiracles in the top of the head; and 'herbivorous' cetacea (Manati). The family of 'blowing' cetacea is divided into two tribes,—the tribe of whales (Balaena); and the dolphin tribe, distinguished mainly by the size and shape of the head.

"The whale tribe (Balaenidae) is divided into the genus whale and the genus cachalot (sperm whale). The genus whale produces the baleen," etc.

This travesty of truth was evidently compiled from text-books of fifty years ago, and, although somewhat amusing from its complete erroneousness, cannot be too severely criticised. Cetology is certainly not in so advanced a condition as could be wished; but there are numerous recent works in which the outlines of the subject are correctly laid down, and from which our author might have gathered facts, and not fictions, with which to preface his chapter upon whalebone.

FREDERICK W. TRUE.

U. S. national museum.

Man in the stone age.

In *Science*, iv. 469, Prof. Henry W. Haynes takes me up sharply in reference to an opinion I expressed about the epoch of the appearance of man, properly so called, in prehistoric time in Europe, and calls this opinion 'a most amazing travesty of the views of Mortillet.'

Professor Haynes tells us that he gave a critical notice of Mortillet's work, 'Le préhistorique; antiquité de l'homme,' in *Science:* it is probable, therefore, that he read that book. But it is evident, that, if he did, he has forgotten it: otherwise he would not repeat that Mortillet takes the station St. Acheul as typical of the oldest stone age, inasmuch as he definitely rejects it as being of mixed later types, and substitutes the station of Chelles (*op. cit.*, 133). He would also have remembered that Mortillet denies, in so many words, that the anthropoid then living was man as we understand the term. These words are, "Nous nous retrouvons, donc, en présence de l'anthropopithèque, dont j'ai démontré l'existence," etc. (p. 248). Passing to the next age or epoch, the Moustérien, he asserts that it, too, was characterized by this race of anthropopitheci (p. 339); while in the third epoch, that of Iolutré, he leaves the question open, denying that any traces of man or anthropoid have been discovered (p. 392).

This brings us late, very late, in paleolithic time, without an osteologic trace of any being who should properly be called *man;* for it would indeed be a travesty to apply that name to a creature without language, without religion, and without social compacts. If the question is to be any thing beyond one of word-splitting, these psychological characteristics must be connoted by the word 'man;' for in all ethnological study they almost alone occupy us, as Peschel has well shown in his chapter, 'Die stellung des menschen in der schöpfung' (Völkerkunde, einleitung). Yet Mortillet himself denies them to his anthropopithecus. DANIEL G. BRINTON, M.D.

Media, Penn., Dec. 13.

Dr. Haacke's discovery of the eggs of Echidna.

In the *Zoologischer anzeiger* of Dec. 1 appears an extremely interesting letter from Dr. Wilhelm Haacke, director of the South-Australian museum at Adelaide. It is dated Sept. 8, and contains an account of the writer's independent discovery of the oviparous character of the monotremes four days before Professor Liversedge transmitted Mr. Caldwell's famous cable from Queensland.

On Aug. 3 last, Dr. Haacke received from Kangaroo Island, a point about one day's journey from Adelaide, a living female Echidna hystrix. With the deliberateness characteristic of his race, he did not examine the animal until Aug. 25. He then ascertained that there were two lateral folds of the mammary pouch, in one of which he felt a small object. In the expectation of finding a young Echidna, he brought it to light; and, to his astonishment, it proved to be an egg, with a membranous shell like that of some of the reptiles, and measuring about two centimetres in diameter. Owing, probably, to the long confinement of the animal, the egg was decomposed, and broke apart under a slight pressure.

On Sept. 2 this important discovery was quietly communicated to a meeting of the Royal society of South Australia; and the Adelaide *Advertiser* of Sept. 4, also the *Register* of Sept. 5, published the fact in their reports of the meeting. In the same number of the *Register* appeared a cable-message from London, announcing Mr. Caldwell's discovery of the eggs of Ornithorhynchus; in which message, probably through a telegraph-operator's error, the word 'viviparous' had been substituted for 'oviparous.' Dr. Haacke immediately wrote to the *Register* in a letter printed on the 6th, pointing out the probable error, and the singular coincidence of the independent discoveries of Mr. Caldwell and himself.

On Sept. 7 the *Register* published an extended account of Mr. Caldwell's researches in Australia, and added in a shorter note, —

"It may also be observed that the announcement which has caused such a sensation among European scientists was made from Queensland on Aug. 29, or a few days after the discovery by Dr. Haacke."

Dr. Haacke closes his paper in the *Anzeiger* with an expression of pleasure that his discovery had met with such an unexpectedly rapid confirmation at the hands of another observer.

This adds another to the numerous coincidences in the history of scientific discoveries. When it is remembered that Mr. Caldwell, at the time of his discovery, was in the interior, and may have been some distance from any telegraphic station, it seems probable that his observation and Dr. Haacke's were only a day or so apart. At all events, each investigator is entitled to the full credit of independent discovery, or perhaps, in view of Professor Gill's recent letter to *Science* on this subject, we may better say confirmation of an old truth that has been disregarded for half a century. After so long a period of ignorance regarding this most important question concerning the monotremes, it is certainly very extraordinary that at points so distant from each other there should have been made, simultaneously, observations upon different genera, either of which practically solved the question for all time.

HENRY F. OSBORN.

Princeton, N.J., Dec. 19.

Artificial wampum.

During a discussion upon wampum, at the Montreal meeting of the British association, I alluded to the fact that there is a wampum manufactory at Paskack, N.J. In the same discussion Major Powell remarked, that, according to his belief, none of the cylindrical beads of which the belts then on exhibition were composed had been made by Indians.

Since my return I have visited the manufactory mentioned above, and I will give a hasty sketch of the same. It is situated at Paskack, on the Hackensack River, and is conducted by four 'Campbell brothers,' the youngest of whom is about seventy years of age.

According to their account, the business has been in their family about four generations. During the life of their grandfather it was situated at Tenack, now Edgewater; and my informant remembers when his grandfather used to go in a boat to Rockaway, and