

ETHNOLOGY AND HISTORY.

WHEN the science of ethnology shall be properly understood, the application of its methods to the sociologic development of the human race will lead to an entirely novel plan of writing history, and to a different appreciation both of its motives and its aims. That which has long been sought for under the attractive name of 'The Philosophy of History' will be found to be nothing more than a series of ethnologic deductions; and 'The Mission of the Historian' in its largest sense will be nothing more than the application of the natural science of man to the welfare of man; nothing more but that will be the greatest achievement which the human species will have witnessed, far transcending any mere material gains or discoveries which it has made or can make.

At the last annual meeting of the New Jersey Historical Society I delivered by request an address upon this subject, which has since been published. A limited number of copies remain by me, which I shall be glad to send to such readers of *SCIENCE* as may apply for them. (Address, Media, Penna.)

PRIMITIVE COSMIC CONCEPTIONS.

SLOWLY but surely the theory that similarities of mythical concepts betokened ancient intercommunication is giving way to the true explanation that such similarities are owing to the unity of the human mind and the sameness of its processes.

No one has taught this profound truth more positively than Prof. Bastian, the eminent director of the Ethnographic Museum of Berlin. Very lately he has published a most instructive work of about 200 pages entitled, 'The Thought Creation of the Surrounding World out of Cosmogonic Conceptions.' (Dümmler, Berlin.) It treats of the various so-called 'elements' which make up the myths of religions, the beliefs

and notions of his surroundings, real and imagined, which every man forms unconsciously to himself, and which deeply influence his life and works. Such are his views about the divine, the soul, death, spirits, creation, magic, etc. These and a hundred others develop similarly in similar stages of culture, and the parallel schemes drawn from culture-horizons far asunder which the author lays before the reader are striking and convincing.

It would be very desirable if Dr. Bastian's remarkable studies on this and allied subjects could be brought in a compact shape before the English reading public.

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NOTES UPON AGRICULTURE AND HORTICULTURE.

DISEASES OF CITROUS FRUITS IN FLORIDA.

THE orange industry is a large one in the warmer portions of our country and the citrus fruits have several diseases which cause annual losses of not less than a half million dollars. In order to obtain good control of these diseases and check their ravages the government has had a station of research in Florida for the past three years, and Bulletin 8 of the division of Vegetable Physiology and Pathology just issued is a report of progress by Messrs. Swingle and Webber at the Subtropical Laboratory. The bulletin commends itself at sight, being attractive in plates, three of which are colored, and the text is carefully prepared. Six diseases are considered, namely: (1) Blight, (2) Die-back or Exanthema, (3) Scab or Verrucosis, (4) Sooty Mould, (5) Foot-rot and (6) Melanose.

The blight, probably contagious, the cause of which is yet unknown, seems to be incurable; therefore affected trees should be burned. Die-back is due to malnutrition and improper drainage and culture. Brown eruptions appear upon the twigs

which afterwards die, and the fruits split and drop before maturing. It is an advantage to withhold organic nitrogenous manures. The scab attacks lemons and sour oranges and disfigures the foliage and fruit by producing warts. It can be prevented by spraying with fungicides. Sooty mould is a fungus following the attacks of insects and fumigations to kill the insect prevents it. Foot-rot is the most destructive malady and is recognized by gum exudation at the base of the tree. The cause is probably some minute organism and prevention is found by cutting away the diseased parts and washing with fungicides. Melanose is a new disease of all citrous fruits, not yet very destructive, the cause of which is unknown, but Bordeaux mixture is a satisfactory remedy.

COMBATTING CARNATION RUST.

THE growing of carnations is a large industry in this country, but is beset with many vicissitudes not among the least of which is the carnation rust. This trouble has been under investigation at some of the experiment stations, and before us lies bulletin No. 100, of the New York Experiment Station, with the title as given above. Mr. Stewart, the author, has tested the germination of the spores of the rust fungus in various substances, and finds, for example, that a 1-100 solution of copper sulphate is much too weak to prevent germination. When common salt is used 1-45 is the strongest solution in which the spores can grow. The spores, on the other hand, are remarkably susceptible to the action of potassium sulphide, a 1-3,000 solution entirely preventing germination. A similar series of results was obtained by soaking cuttings in the above solutions, those in potassium sulphide being unharmed. Attempts to cure rusty plants by spraying with fungicides failed, but good results were obtained in preventing its appearance

upon healthy plants. Rust, it has been shown, will spread among mature plants. It is important that carnation plants be held up from the ground by inverted V's of wire netting. For unknown reasons, some varieties are much more susceptible than others to the rust.

POTATO DISEASES UPON LONG ISLAND.

IN addition to his carnation investigations Mr. Stewart has made a study of potato diseases, the results of which appear in Bulletin No. 101, of the New York Station. In addition to the good results following from spraying with the Bordeaux mixture for the blights, notes are given upon an internal browning of potatoes, the cause of which is not determined. The brown spots are entirely surrounded by healthy tissue, and cultures made from the discolored portions produced no growth. Under the microscope the brown spots give no clue as to the cause of the trouble, and it would seem to be physiological and not mycological in its origin. Field experiments indicate that the browning is not transmitted from seed to product, but the discolored tubers are not the best to use for planting. There are several stem blights of potatoes, but Mr. Stewart finds another which seems to strangle the plant and working internally will be a difficult one to check. A new fusarium (*F. acuminatum* E. & E.) is reported.

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SCIENTIFIC NOTES AND NEWS.

ASTRONOMY.

A MEETING was held at Paris last month which will be of the greatest importance to the progress of astronomical science. Each of the four nations whose governments publish elaborate astronomical ephemerides were represented at this meeting. The object of the conference was the discussion of the best system of astronomical constants, with a view to the introduction