

## SCIENCE:

A WEEKLY NEWSPAPER OF ALL THE ARTS AND SCIENCES.

PUBLISHED BY

N. D. C. HODGES,

47 LAFAYETTE PLACE, NEW YORK.

SUBSCRIPTIONS.—United States and Canada.....\$3.50 a year.

Great Britain and Europe..... 4.50 a year.

Communications will be welcomed from any quarter. Abstracts of scientific papers are solicited, and twenty copies of the issue containing such will be mailed the author on request in advance. Rejected manuscripts will be returned to the authors only when the requisite amount of postage accompanies the manuscript. Whatever is intended for insertion must be authenticated by the name and address of the writer; not necessarily for publication, but as a guaranty of good faith. We do not hold ourselves responsible for any view or opinions expressed in the communications of our correspondents.

Attention is called to the "Wants" column. All are invited to use it in soliciting information or seeking new positions. The name and address of applicants should be given in full, so that answers will go direct to them. The "Exchange" column is likewise open.

VOL. XVI. NEW YORK, OCTOBER 3, 1890. No. 400.

## CONTENTS:

CHANGES IN COLOR OF HAIR AND FEATHERS. <i>D. W. Prentiss</i> .....	183	Is Cancer Contagious too?.....	191
POISONING BY MUSSELS.....	187	Treatment of Tuberculosis by the Vaccine Method.....	191
RECENT THEORIES OF GEOMETRICAL ISOMERISM.....	188	A Return to Blood-Letting.....	192
NOTES AND NEWS.....	188	LETTERS TO THE EDITOR.	
THE STUDY OF FOLK-LORE.....	190	Professor Hazen and Espy's Experiments. <i>Wm. Ferrel</i> .....	192
HEALTH MATTERS.		BOOK-REVIEWS.	
Improved Sanitation in London..	191	Belief in God; its Origin, Nature, and Basis.....	193
Removal of Micro-Organisms from Water.....	191	AMONG THE PUBLISHERS.....	193
Why He renounced Vegetarianism.....	191		

THE STUDY OF FOLK-LORE.<sup>1</sup>

THE term "folk-lore" seems to many persons to cover a field of study not clearly defined; but this quality of indefiniteness is common to all terms used to denote studies connected with the intelligence of man. "Anthropology," "ethnology," "psychology," are each terms embracing a vague and infinitely extended field, which, in practice, is limited by more or less arbitrary boundaries.

By "folk lore" is to be understood oral tradition,—information and belief handed down from generation to generation without the use of writing. There are reasons why the mass of knowledge (including history, theology, and romance) which has been orally preserved in any people should be set aside as capable of independent treatment. Such matter must express the common opinion, or it would not be remembered; it must be on a level with the notions of the average rather than of the exceptional person; it must belong, that is, to the *folk* rather than to individuals.

The term "folk-lore" has its most definite significance in connection with civilized peoples of modern Europe, having been invented by an anonymous correspondent of the London *Athenæum* (Aug. 22, 1846), who signed his name Ambrose Merton, understood to be a pseudonyme for W. J. Thoms. He included under this title "manners, customs, observances, superstitions, ballads,

proverbs," and claimed the honor of introducing into the language the word "fo'k lore," as Disraeli had claimed the honor of "fatherland." The latter word has not met with success; but "folk-lore" has been accepted not only in English speech, but also in most European languages.

It was soon evident that the oral traditions of Europe could not be treated by themselves without consideration of oral traditions in other parts of the globe. Customs and superstitions found in the United States, for example, not only among recent immigrants, but also in families of the purest English stock, have evident connection with practices and beliefs widely extended among savage tribes. It was therefore necessary to extend the term "folk-lore" so as to cover these. There was some protest against these, inasmuch as the name "folk" belongs properly to races in which isolated tribes have been amalgamated into something resembling a nation; but this difficulty could not be allowed to prevent a convenient inclusion. So the expression came to be used, first in a definite sense, as including tales, beliefs, and practices now retained among the unlettered peasantry of Europe; second, with a wider connotation, as embracing traditionary tales, customs, and usages of uncivilized races. In its broader meaning, therefore, folk-lore is a part of anthropology and ethnography, embracing the mental side of primitive life, with especial reference to the narratives in which beliefs and habits are related or accounted for.

The subject has two sides,—the æsthetic or literary aspect, and the scientific aspect. Remarks were made on folk-lore from each of these points of view.

In treating of the literary side of folk-lore, the lecturer took his illustration from English ballads. The character of the ballad as a dance-song (late Latin *ballare*, "to dance") was pointed out, and it was shown that dancing in couples, as a mere mode of motion, was comparatively modern. According to more ancient usage, a dance was a dramatic performance, setting forth a story, which was related in a song serving to guide the movement. An illustration of this custom was still to be seen in the "ring-games" of children. The date of collection of English ballads, and the periods of their composition, formed the theme of observations. It was shown that the circumstance of the late recording of many ancient ballads in Scotland had led to the erroneous supposition that Scotland had possessed a distinctively national song, unlike that of England; the fact being that so-called Scottish ballads were only dialectic survivals of songs formerly common to all parts of Great Britain. For the origin of these compositions it is necessary to look beyond the limits of English speech; mediæval ballads not being the property of any one European country, but in a measure a common stock.

The qualities which rendered these songs of interest were remarked on, and popularity, simplicity, and antiquity were named as constituting the charm of the ballad. What has been repeated for centuries, has passed from lip to lip, and formed the joy of all classes, must stand on a different level from sentences penned for a chosen few. Ballads show that there was a period in which the mediæval noble and the mediæval serf stood nearly on the same intellectual level. These compositions serve as a perpetual lesson of simplicity, and will always be of value to bring literature back to that character of naturalness and simplicity in which true art must consist.

Proceeding to treat of the scientific side of the study, an example of a surviving American superstition was cited in the practice still in use in certain parts of the country to charm rats away from houses by writing letters to them. A specimen of such a letter was read, for the accuracy of which the lecturer could vouch, the district being the seacoast of Maine. It was shown that this method of ridding a house of rats was also occasionally used in Maryland. Comparisons from Scottish folk lore showed that the superstition was spread throughout the English-speaking world. The custom was also shown to prevail widely in France, and its origin traced to the mediæval practice of addressing legal citations and ecclesiastical admonitions to animals.

Following out the subject into the belief of savage tribes, the underlying principle was shown to be a doctrine respecting the identity of animal and human existence. In uncivilized races,

<sup>1</sup> Abstract of an address to the New York Academy of Sciences, March 24, 1890, by William Wells Newell, secretary of the American Folk-Lore Society.

animals are supposed to be actuated by the same motives as men, and their communities to be organized according to the rules of ethics that prevail in human society. Examples of the relation of animals and mankind were taken from the religious medicine of the Cherokees. Finally an account was given of the universal belief that animals can assume the human form, and appear at pleasure in that manner. In this manner it was made to appear that no account could be given of the American superstition without examining the character of primitive belief.

Finally the great psychological importance of the collection of folk-lore, and the necessity of immediate effort to preserve a record of it in this country, were dwelt upon. As the secretary of the American Folk-Lore Society, the lecturer presented the claims of that body, and expressed a hope that steps would be taken to increase interest in the study in New York, and to obtain more general co-operation in the important task lying before collectors and special students.

#### HEALTH MATTERS.

##### Improved Sanitation in London.

DR. B. W. RICHARDSON, in his abridgment of "The Health of Nations," gives a comparison of mortality in the Elizabethan and Victorian eras: "According to John Graunt's reports, from the parish registers, the condition of the whole city of London in the time of Queen Elizabeth was very much that of a 'slum.' The death rate was, in fact, that of a slum (it was more than 40 per thousand); but now, under some advance towards unity and centralization, it is about 20 per thousand, still including upwards of one-third of preventable deaths. The death-rate then largely exceeded the birth-rate, while now the reverse is the case. The death-rate of the children under five years was then one third, or 33 per hundred: it is now 27 per hundred, and grievously too heavy. The deaths from old age, or the age then called old, of seventy, were 7 per cent: they are now sadly too low, but even in the city proper they are 18 per cent. As to personal security, John Graunt boasted that not more than one in two thousand was then murdered annually, which he ascribes to good local government. At the same rate now, murders in the whole of the metropolis should amount to no less than 2,500 annually, whereas they actually amount to an average of no more than 12 for the whole five millions of population,—a population which approaches to that of the whole kingdom of England and Wales in the time of Elizabeth."

##### Removal of Micro-Organisms from Water.

Dr. Krüger, considering the fact that more bacteria are usually present in rivers than in lakes, notwithstanding that lakes themselves in many cases are more or less polluted by rivers passing through populous towns, believes that this rapid decrease in the number of organisms may very possibly be due in part to the action of direct sunlight, but in the main to the tendency of water in a comparatively undisturbed state to deposit and precipitate. He therefore carried out a number of experiments with a view to determine how far the removal of organisms was brought about by the mere mechanical deposition of inert matter, and also by precipitation as a result of chemical action. The mechanical precipitants employed, all in a state of fine powder and sterilized, were alumina, brick-dust, clay, chalk, sand, coke, and charcoal. Water obtained from an ordinary service-pipe was impregnated with a liquid containing a bacillus growth of a species incident to tap-water. This was divided into two portions,—one for precipitation with the inert substance, and the other was untreated for the sake of comparison. Experiments were similarly carried out in which precipitation was obtained as a result of chemical action such as is brought about by the addition to the water, containing naturally lime, magnesia, etc., substances like wood-ash, sulphate of alumina, and slaked lime. The general conclusion came to by the author from the results obtained, as we learn from the *Medical Record* of Sept. 27, is that undoubtedly large numbers of bacteria are carried down by inert substances merely sinking in the water, but that the action is very considerably increased when, in addition to mechanical deposition, a chemical precipitation also

takes place. The corollary is evident,—inert substances do mechanically assist in the precipitation of micro organisms, but preference should be given to chemical treatments.

##### Why He renounced Vegetarianism.

Dr. Alanus, the former leader of the vegetarians in Germany, has renounced his faith, and resumed the use of animal food, says the *Medical Record* of Sept. 27. In a letter written to a local paper, he gives the reasons for his apostasy. He had lived for a long time, he said, on a purely vegetable diet without experiencing any ill effects, feeling no worse and no better than he had formerly while living as the rest of mankind. One day, however, he found that his arteries were apparently becoming atheromatous. He was unable to account for this, as he was not a drinking man, and was still under forty years of age. Finally he came across a statement by Monin, to the effect that abstinence from animal food was a fertile cause of atheroma. He could hardly have been much of a student of dietetics not to have come across that theory until his own arteries had become diseased. There is nothing like taking comfort out of every thing, however; and he now consoles himself with the remark that he has "become richer by one experience, which has shown me that one single brutal fact can knock down the most beautiful theoretical building."

##### Is Cancer Contagious too?

The fact that certain spots constitute apparent foci for the spread of cancerous disease has ere now been noted, though we are still completely in the dark as to the causes which underlie these vagaries of distribution. It is, however, only by systematic close observation that we can hope to solve the enigma, and acquire the knowledge which alone will enable us to check the ravages of a terrible and implacable disease. Some observations made by Dr. Arnaudet in the little village of Saint Sylvestre-de-Cormeilles, in Normandy, are interesting in this respect. The village, according to the *Medical Press*, only numbers some four hundred inhabitants, but among them the deaths from cancer are four times more numerous than at Paris (14.88 as compared with 4.16 per hundred deaths). In the course of his inquiry into the causes of this special mortality, Dr. Arnaudet discovered that there were certain "cancer nests" which the theory of contagion could alone explain. The water-supply of these people is drawn almost exclusively from surface ponds; but he observes that very little water is drunk, though it is used in the manufacture of cider. He shows on a chart that the malady developed itself successively along a line corresponding to the water-supply supplying the ponds, and he is evidently strongly inclined to attribute the outbreak to the water, or, secondarily, to the cider. He subsequently extended his observations to four neighboring communes, in all of which the proportion of deaths from cancer was largely in excess of the normal rate. This inequality of distribution seems to point to the existence of local causative conditions, the nature of which it is highly important to elucidate.

##### Treatment of Tuberculosis by the Vaccine Method.

On Nov. 19, 1889, Drs. J. Grancher and St. Martin addressed to the Académie de Médecine, Paris, a sealed packet relating to a method of treatment and preventive inoculation of tuberculosis based upon numerous experiments which they had made on rabbits. The communication made by Dr. Koch to the Berlin Congress (of which the full text was published in the *British Medical Journal* of Aug. 16), concerning the results which he has obtained in rendering guinea-pigs refractory to tuberculosis, or in curing them of advanced forms of tuberculosis, has induced MM. Grancher and St. Martin to make known their researches on the same subject earlier than they would otherwise have done. In all these experiments they chose the rabbit as the subject of inoculation and intravenous injection, because there is thus produced a tuberculosis which kills very quickly, and at an almost fixed date, with constant lesions of the liver, the spleen, and the lungs, and which defies all local treatment. Tuberculosis thus induced being always fatal, a solid basis is thus secured which allows exact appreciation of the negative or positive results of any method which tends to produce the refractory state or to cure after infection. The