

THE CALIFORNIA BRANCH OF THE AMERICAN
FOLK-LORE SOCIETY.

THE fourth meeting of the California Branch of the American Folk-Lore Society was held in Room 22, South Hall, University of California, Berkeley, Tuesday, November 14, 1905, at 8 P.M. Mr. Charles Keeler presided.

The minutes of the last meeting were read and approved. The following persons approved by the council were elected to membership in the society, the secretary being instructed to cast the vote of the society for them: Mr. R. F. Herrick, Mrs. S. C. Bigelow, San Francisco; Mrs. Zelia Nuttall, Mexico; and Mr. and Mrs. Oscar Maurer, Berkeley.

The president spoke briefly on the aims of the society, reviewed its history, and announced coming meetings.

Professor John Fryer then delivered a lecture, illustrated with specially prepared lantern slides, on 'Fox Myths in Chinese Folk-Lore.' Professor Fryer briefly discussed Chinese folk-lore in general, its hold on the mind of the people, the important place occupied by superstitions regarding the fox, and recounted a number of interesting and suggestive fox tales.

Two hundred persons attended the meeting.

THE fifth meeting of the California Branch of the American Folk-Lore Society was held in the Unitarian Church, Berkeley, Thursday, December 7, 1905, at 8 P.M. Professor John Fryer presided.

The minutes of the last meeting were read and approved.

The following persons approved by the council were elected to membership in the society, the secretary being instructed to cast the vote of the society for them: Mrs. M. S. Biven, Oakland, Miss G. E. Barnard, Oakland.

Professor Wm. F. Bade delivered a lecture on 'Hebrew Folk-Lore,' based primarily on folk-lore elements in the Book of Genesis.

At the conclusion of the lecture a vote of thanks was tendered Professor Bade, as also the trustees of the Unitarian Church.

One hundred and fifty persons attended the meeting.

A. L. KROEBER,
Secretary.

DISCUSSION AND CORRESPONDENCE.

THE SOILS FOR APPLES.

IN connection with the instructive article of H. J. Wilder on soils suitable for the production of apples (SCIENCE, December 1), I call attention to one point which is only casually mentioned by him.

I think that in general we may draw very useful conclusions as to the primary needs of culture plants from the habitats of their wild congeners or progenitors. In the case of the apple, we have the wild 'crab apple as a precedent; and any one who has paid attention to such matters will remember the groves of fragrant crab apples on the black prairies of the middle west and southwest, where they sometimes form the almost exclusive tree growth, though varied occasionally with clumps of the large-fruited red-haw (*C. coccinea*) and a honey locust here and there. The soils of these prairies are all distinctly and sometimes strongly calcareous; and where the latter is the case we usually find the highest color both of blossoms and of fruit of the crab, and also the most abundant crop. The tree at times invades adjacent hills, and here we may see, by way of contrast, pale flowers and fruit, on long branches with a sparse crop.

The wild apple is distinctly a calciphile plant, frequenting the heaviest as well as light sandy soils, provided sufficient lime carbonate be present. The latter condition rarely exists in the humid region in very sandy soils, because from these the lime is quickly leached into the subsoil or subdrainage whenever they are cultivated. Hence naturally the failure of apple orchards to maintain themselves on sandy soils for any length of time, as indicated by Wilder. For it is *a priori* reasonable to suppose that the cultivated apple, while *tolerating* soils poor in lime, will also prefer the calcareous soils on which its ancestors flourished, sometimes to the exclusion of all other tree growth.

The fact that a reasonably calcareous soil is one of the prime conditions for profitable apple culture will, I think, be found abundantly verified in the apple-producing districts of the United States. But it must be understood distinctly that the current definition of

a calcareous soil, viz., one that will 'effervesce with acids' (requiring the presence of at least three per cent. of carbonate), goes far beyond what insures the presence of calciphile plants in thousands of cases. I have elsewhere summed up what may be said on this point, to the effect that while in heavy clay lands as much as six tenths per cent. of lime in the soil may be necessary to secure the advantages of calcareous lands, in the case of light sandy soils one tenth per cent. may be sufficient to produce natural calciphile growth, and, therefore, also the cultures which, like the legumes, demand soils which are not only neutral, but which shall be able to supply to them freely the lime which forms so prominent an ash ingredient.

In this, the proper sense of the word, calcareous soils will be found to exist not only in limestone districts, but in all derived from hornblendic rocks, including black lavas and basalts, and also from the rocks containing either labradorite or some of the soda-lime feldspars. Such soils rarely effervesce, but when wetted they show with red litmus paper, at the end of twenty minutes, the blue reaction which is wholly independent of 'alkali.' Even dilute acetic acid will in that case readily dissolve from the soil enough lime to give a plain reaction with oxalates.

I trust that this point of view may be made the subject of verification by Mr. Wilder as well as others.

E. W. HILGARD.

BERKELEY, CAL.,

December 8, 1905.

ISOLATION AS ONE OF THE FACTORS IN EVOLUTION.

It was with much pleasure that I read the article of President D. S. Jordan on 'Isolation' in a recent number of *SCIENCE*,¹ and, aside from the fact that I am able to add a large number of cases, I have nothing to comment upon. But the subsequent article by Professor J. A. Allen² demonstrates again that the principle of isolation or separation is not generally understood in its full meaning.

Jordan expresses the opinion that isolation is a factor in the formation of every species on the face of the earth. I can not strongly

enough endorse this view, for it is absolutely unthinkable that two species may be derived from one ancestral species without the action of isolation. All the instances introduced by Allen as opposed to this view are rather in support of it. He concludes that in variations of certain widely distributed species, which pass into each other from one extremity of the range to the other, no isolation by barriers exists, but that there is continuous distribution. Indeed, there is continuous *distribution*, but there is no continuity of *bionomic conditions*. These different bionomic conditions pass into each other, and, consequently, we have varieties, and not species. This is clearly the first step toward complete isolation, and for complete isolation 'barriers' in most cases are not absolutely necessary features.

It is not quite correct to conceive isolation only in its coarsest sense, as topographic or climatic separation. This mistake is often made, but I pointed out, about ten years ago, that the real and most important value of the principle of separation lies in its general *bionomic* sense. The same idea was maintained long ago by Gulick, and has been treated recently by him in an elaborate monograph.³ I am fully in accord with most of Gulick's ideas as to the influence of separation upon the formation of species, chiefly as opposed to the senseless abuse of the term species introduced by the de Vries school. 'Bionomic separation,' as used by myself, and 'habitudinal segregation,' as used by Gulick, are practically identical terms.

With Jordan (and with Gulick) I believe that 'bionomic separation' is absolutely necessary for the formation of species, but that it is not the only factor taking part in the process called 'evolution.' With regard to this, I may be permitted to quote from a paper published by myself in 1896,⁴ which seems to have been overlooked generally:

* * * We have to distinguish *four factors* accomplishing the diversity, development and differentiation into species of organic beings: we

³ Gulick, J. T., 'Evolution, Racial and Habitudinal,' Carnegie Institution, Washington, 1905.

⁴ 'On Natural Selection and Separation,' *Pr. Amer. Philos. Soc.*, 35, 1896, pp. 175-197, especially pp. 188-190.

¹ *SCIENCE*, November 3, 1905, p. 545 ff.

² *SCIENCE*, November 24, 1905, p. 661 ff.