eal Union, addressing communications in care of the Research Information Service, National Research Council, 1701 Massachusetts Avenue, N. W., Washington, D. C., U. S. A. It is hoped, further, that complete as well as accurate information may be supplied concerning all stations not now fully described.

THE Genetics Division of the California Agricultural Experiment Station is investigating the genus *Crepis* for the purpose of finding favorable material for genetic research. As many as possible of the species in this genus will be grown and tested. Incidentally material will be accumulated for a monograph on the genus. About 35 species from foreign countries are now being grown at Berkeley, but none that are native to North America. The object of this appeal is to interest American collectors in the work so as to secure viable seeds of American species during the present year. Seeds may be sent to Division of Genetics, University of California, Berkeley, California.

DR. C. E. RUBY is making a collection of verse of all varieties, whose subject matter relates to the sciences, with the ultimate purpose of publishing an anthology of such poetry. Readers of SCIENCE are invited to send any verses of this character, which may be available to them, or to send suggestions as to possible sources of such verse to Dr. Ruby, 7 St. Paul Street, Cambridge, Mass. In sending such contributions, it is desirable that the author's name, and other needful details, including the permission to publish the poem (if it is possible for the contributor to include this permission) accompany each poem.

FIRE during the night of January 9 in the laboratories of the department of anatomy, Loyola University School of Medicine, 706 S. Lincoln Street, Chicago, destroyed the collection of reprints and files of journals of Professor R. M. Strong. He writes that he would be grateful to authors who have sent him reprints in the past for any replacements which it may be convenient for them to make. The research material, unpublished drawings and loan collections of the department were essentially untouched.

UNIVERSITY AND EDUCATIONAL NOTES

THE Corporation of Yale University has received an anonymous pledge of $100,000 for the establishment of the William H. Carmalt professorship fund in the School of Medicine. The president was authorized to designate annually a professor of the medical school as the William H. Carmalt professor.

DR. ALLEN FISKE VOSHELL, former resident orthopedist at the Johns Hopkins Hospital, has assumed charge of the department of orthopedic surgery at the University of Virginia Medical School and Hospital.

THE General Education Board has offered $250,000 toward the one million dollars of the Radcliffe Endowment Fund provided that the rest of the million is raised by July 1.

DR. JOHN HEISLER is now carrying on the work of anatomy in the School of Medicine of the University of Pennsylvania, a position formerly filled by Dr. Piersol. Dr. G. P. McHoueh has been appointed a full-time instructor in physiology.

DR. AUSTIN BAILEY, who has recently been employed as superintendent of the apparatus division of the Corning Glass Works, has resigned his position to accept an assistant professorship in the department of physics at the University of Kansas.

MR. HUBERT H. NEWELL, of the Research Laboratory of the Westinghouse Electric and Manufacturing Company, has resigned to accept a position at the Worcester Polytechnic Institute.

E. A. ALLCUT has been appointed associate professor in the department of thermo-dynamics at the University of Toronto.

PROFESSOR J. W. NICHOLSON has been elected to a war memorial fellowship in physics and mathematics at Balliol College, Oxford.

DISCUSSION AND CORRESPONDENCE

DISCOVERY OF GIGANTIC FOOTPRINTS IN THE COAL MEASURES OF KANSAS

ICHNOLOGY still holds an important place in

the literature of paleontology, and it is a pleasure for the writer to add a new item to the information already given by Mudge and Marsh, many years ago, concerning vertebrate footprints of the Coal Measures of Kansas.

The literature has been summarized and a description of a large slab of limestone from Osage County, Kansas, bearing footprints has been given by Moodie in his monographic work on the Coal Measures Amphibia of North America. No new information concerning vertebrate footprints in the Coal Measures of Kansas has been published since that work appeared in 1916. The new discovery is thus all the more interesting, and especially so since a huge type of Coal Measures vertebrate, otherwise unknown, is indicated by these tracks. Moodie has likewise described, in the above-mentioned work and elsewhere, skeletal remains of a large labyrinthodont (?) but of a size insufficient to have made the tracks described herewith.

The present discovery relates to a series of eight footprints discovered by the sons of Dr. George Coghill and turned over to the writer for excavation and description. They were discovered in a heavy sandstone, a formation extending generally over eastern Kansas, lying just above the Weston Shales, exposed in a high cliff near the Dightman bridge over the Wakarusa Creek, some five miles southeast of Lawrence, Kansas. The series of tracks extended for a distance of twenty-five feet in a direct line, but several tracks of the series are evidently missing as they average about two feet six inches apart, and wider spaces occur in two places.

The tracks vary slightly in size, due doubtless to the plasticity of the matrix when the imprints were made. They have an average of six inches in breadth, by from six to seven inches in length, and both the front and the hind feet appear to be represented, as two of the imprints distinctly show the presence of four toes, while three of them show five toes.

One impression seems to indicate that the hind foot was placed over the impression of the front foot. These footprints, if properly interpreted, indicate the largest Coal Measures vertebrate so far known. A more detailed account, with photographs, will appear in a later paper on the subject.

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LIESEGANG RING FORMATION

RECENTLY, I advanced a theory to explain Liesegang's rings. [1] Unaccepted theories were not discussed. [2] Bradford [3] objects to my theory, and to the omission of literature.

That I am unaware of some work on banded precipitates is possibly correct. However, I disagree with the chemical analysis [4] on which his adsorption theory is built. I agree with him that bands of lead chromate can be obtained in gelatine, also with silver nitrate in the gelatine and bichromate in aqueous solution. Further, I think that banding is the normal formation of precipitates, and may occur in any solution. The function of the gel is to fix—relatively—one of the ions, and render banding visible. Ordinarily the reaction between the ions is so violent and the field of the reaction so stormy that bands are destroyed. In my theory, *relatively fixed* was used, except in one place, and the discussion shows that an absolutely fixed state was not intended. In fact an absolutely fixed state of one ion, or a relatively fixed state of both ions —as in superimposed gelatine layers of $AgNO_3$ and $K_2Cr_2O_7$—tends to prevent banding. Bradford states that the ionic attraction of silver and chromate is insufficient to explain banding in gelatine and not in agar. However, silver chromate bands form in agar quite readily, and revision of the theory is unnecessary to explain banding in this gel. I agree with him that bands of lead chromate can be obtained in gelatine with proper concentrations of lead acetate and potassium bichromate. Direct reversal of the solutions, however, without change of concentrations is not a reliable method.

Band formation is beautifully illustrated in the growth rings of trees. Rings in gels are formed similarly.

[1] SCIENCE, July 22, 1921.

[2] Bancroft, "Applied Colloid Chemistry," 1921, p. 259.

[3] SCIENCE, Nov. 11, 1921, p. 463.

[4] *Biochemical Journal*, 1916, X, p. 173.