

pose. The present expedition has been rendered possible by a grant from the "Raskorsted Fund." The probable site of the station will be in the Ké islands, previous research having shown that there is an unusual abundance of animal life in the waters to the west of the group. What is really a deep-water fauna is here found at comparatively small depths—200-300 meters—making it easy to collect rare deep-water species. It is possible that Dutch cooperation may be secured, and in any case the intention is to give an international character to the station.

### UNIVERSITY AND EDUCATIONAL NOTES

MRS. DOROTHY WHITNEY STRAIGHT will give to Cornell University a million-dollar building to be used as a center for the social and recreational life of the students.

At the commencement of Princeton University a gift of \$100,000 was announced from James H. Lockhart, of Pittsburgh, for the endowment of scholarships in memory of his father, Charles Lockhart.

HEARST HALL and Hearst Hall Annex were destroyed and the Pathology Building of the University of California was damaged on June 21 in a fire with estimated loss of \$100,000. Hearst Hall, a large frame structure, was the gift to the university women of Mrs. Phoebe Apperson Hearst. Mr. William Randolph Hearst has undertaken to rebuild Hearst Hall and its accessory buildings in fireproof material.

DR. HAVEN EMERSON has been appointed professor of public health and administration in the College of Physicians and Surgeons, Columbia University, and given the task of working out a plan for the organization of the Institute of Public Health established by the bequest of the late Joseph A. DeLamar.

MR. SIGFRED HAUGE and Mr. Robert Evans have been appointed instructors in the division of agricultural biochemistry of the University of Minnesota. Dr. Paul F. Sharp, instructor in the division, has been appointed assistant chemist of the Montana Agricultural Experiment Station.

PROFESSOR S. I. KORNHAUSER, of Denison

University, has been appointed head of the department of anatomy of the School of Medicine of the University of Louisville, in the place left vacant by Dr. Chas. Brookover. During the summer Dr. Kornhauser will be biological assistant to Colonel William G. Atwood, director for the committee on marine piling investigations of the National Research Council.

DR. ALFRED POVAH, formerly associate professor of plant pathology and associate plant pathologist at Alabama Polytechnic Institute, has been appointed assistant professor of botany at Northwestern University.

DR. A. O. WEESE, professor of biology at the University of New Mexico for the past ten years, has accepted the professorship of biology at James Millikin University, Decatur, Illinois, recently made vacant by the death of Dr. A. A. Tyler. Professor Weese has spent the past year at the University of Illinois.

### DISCUSSION AND CORRESPONDENCE

#### THE NEW CATASTROPHISM AND ITS DEFENDER

REFERENCE was made in my contribution to *SCIENCE* for February 17 to Professor Price, alleged geologist, upon whose scientific vagaries a reactionary theology relies much in its recent attack on evolution—the result of a recrudescence of the old conflict which such a theology has ever waged against the progress of science.

George McCready Price, who since 1906 has held positions as professor of geology, College of Medical Evangelists, Loma Linda, California, professor of English literature, Fernando Academy, California, and professor of chemistry and physics, Lodi Academy, California, is evidently in the religious denomination (Seventh Day Adventist) to which he belongs held to be a man of considerable versatility.

The writings by which he is best known are two books, "Fundamentals of Geology" (1913), and "Q. E. D., or New Lights on the Doctrine of Creation" (1917), and numerous articles in the religious press—chiefly the Philadelphia *Sunday School Times*.

The distinctive ideas for which he stands in

geology (the only ones to be reviewed in this article) are:

First: What he terms the "New Catastrophism," which turns out to be nothing more than the Old Catastrophism embodied in the Noachian Deluge.

Second: A literal creation of material things (the sidereal universe with its parts apparently in different stages of development—its nebulae, hydrogen stars, metallic stars, carbon stars and dark stars); and all animate things (trilobites, nummulites, graptolites, ammonites, sigillaria, the fishes of the Old Red Sandstone, the large reptiles of the Mesozoic, the mammoth and the mastodon, the one-toed horse and the three-toed horse, and man) all at one and the same time just as set forth in the first chapter of Genesis.

While not committing himself to any estimate of the time back of the present when all this took place, it is evident that he leans to a "short chronology"; for in Chapter IX of his *Fundamentals of Geology* he argues for a catastrophic instead of a uniformitarian rate for the deposition of strata. In Chapter I of his "Q. E. D." he refers to the study of the phenomena of radioactivity as having "thrown a good deal of doubt upon the older estimates of the age of the earth," but he fails to inform his reader that such study has revealed the necessity of postulating a long succession of atomic transformations, and has enormously extended the length of geologic time.

Realizing that if there has been a geological succession of life on the earth "then some form of genetic connection between these successive types is the intuitive conclusion of every thinking mind, even though the recovery of these connecting links may prove impossible," and his Genesis account, which he is out to defend at all hazards, goes by the board, he flatly denies that there has been any geological succession, and sets himself to the task of endeavoring to prove the astounding thesis "that all fossils are of the same age and none of them older than man." In doing this he shows wide familiarity with geological literature, quoting largely from the most eminent authorities in this country and in Europe. Any one reading these writings of Price, which possess a certain charm of literary style, and indicate on the part of the author a gift of popular

presentation which makes one regret that it had not been devoted to more laudable purpose, must constantly marvel at the character of mind of the man who can so go into the literature of the subject and still continue to hold such preposterous opinions.

The position of superiority he arrogates to himself is amazing: With his solicitude for harmonizing his views with those of the Bible so palpable, one of his eyes, at least, being always "kept on Genesis," he still has the face to accuse all "other geologists" of being biased, charging that they hold to a belief in geological succession "solely on the strength of the infallibility of a theory" (elsewhere referred to as the onion-coat theory of Werner) "invented a hundred years ago in a little corner of western Europe."

So much under the spell of this old Wernerian hypothesis are geologists still (excepting himself), that, according to Price they "invent" unconformities and faults to explain breaks and repetitions in the life succession.

Price especially endeavors to find "mare's nests" in the "alleged" great thrust faults of the earth, impugning the competency or integrity, or both, of the distinguished geologists who vouch for their existence: as that of Heim and Rothpletz for the great Glarus overthrust in the Alps, that of Geikie for the great overthrust in Scotland, that of McConnell, Campbell and Willis for the great overthrust along the eastern front of the Rockies in Canada and northwestern United States, and finally that of Hayes for the numerous overthrusts in the southern Appalachians.

Professor Price also thinks he has found another geological "mare's nest," one that ought to confound these believers in a geological succession, in the fact:

"That the rivers of the world in cutting across the country, completely ignore the varying ages of the rocks in the different parts of their courses, and act precisely as if they began sawing at them all at the same time."

Evidently the conception of a superimposed river, disclosing old buried structures as it deepens its channel, so easily understood by any high school student of physiography, is beyond the mental grasp of the author of "Fundamentals of Geology."

This then is the man who, while a member

of no scientific body and absolutely unknown in scientific circles, has in at least one of his contributions to the religious press (the one in which he tried to make much of the so-called anti-evolution admissions of Bateson) had the effrontery to style himself "geologist," in the expression he there used "we geologists"; and this is the man who in his support of a literal Genesis is hailed by the "Fundamentalists" as their great champion—one who has "demonstrated the absurdity of the evolutionist's geological theories" and has brought into prominence the "heretofore mute evidence of a mighty upheaval and a flood."

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### KEYS IN SYSTEMATIC WORK

TO THE EDITOR OF SCIENCE: It seems more mechanical uniformity is possible in the keys which systematists find of so much value in descriptive work. The number of forms used now is limited apparently only by the number of authors publishing such keys, and among this large number of forms are many which are wasteful of space and many which are confusing to the student.

Some of the mechanical requirements of a good key may be briefly summarized:

1. The key should occupy a minimum amount of space, and should present the minimum difficulty to the printer.

2. The key should be capable of indefinite expansion, that is, provide for any number of groups, and no headings of groups or sections should be duplicated.

3. Any desired space under each heading should be available.

4. Coordinate groups in the key should be recognizable as such at a glance and such coordinate groups should be in juxtaposition.

5. The key should be as readily "run backward" as "run forward."

Ample reasons for all these requirements could be given but need not be detailed here. The following skeleton key shows a form which I believe meets all these requirements, and it is presented for criticism in the hope that after discussion some form of key may be found which will meet with general approval. Sec-

tions 3 and 3' show length of printed lines when several lines are required for a section.

### KEY TO SPECIES *a-h* OF THE GENUS *X*

1.	Tarsi spurred.....	2.
1'.	Tarsi not spurred.....	5.
2 (1).	.....	a.
2'.	.....	3.
3 (2').	.....	
	.....	4.
3'.	.....	b.
	.....	c.
4 (3).	.....	d.
4'.	.....	e.
5 (1').	.....	6.
5'.	.....	f.
6 (5').	.....	g.
6'.	.....	h.
6''.	.....	

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### THE Y-CHROMOSOME TYPE OF SEX-LINKED INHERITANCE IN MAN

In a short article which appeared in the *Journal of Heredity* for November, 1921, Richard Schofield describes a case of human inheritance which has very great theoretical interest. It involves the transmission through four generations of a condition called webbed toes. The condition is found only in male members of the family and is transmitted from father to son, never to a daughter nor through a daughter to her sons.

It thus has the distribution in heredity of a Y-chromosome, a structure found only in the male-determining spermatozoa of certain animals and never in their eggs. The Y-chromosome accordingly is a structure possessed by male individuals only and thus forms an appropriate vehicle for the transmission of characters from father to son, quite independently of the female line of descent. All this was pointed out by Schmidt in a contribution from the Carlsberg Laboratory, which I reviewed in SCIENCE for April 8, 1921, under the title "A New Type of Inheritance." Schmidt described in a fish the first known case of inheritance of this type. This has since been confirmed in the case of another species of fish by a Japanese observer, so that it may now be regarded as well established. Schofield's article