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. Sections 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.
4 (3).		*c.*
4′.		*d.*
5 (1′).		*e.*
5′.		6.
6 (5′).		*f.*
6′.		*g.*
6″.		*h.*

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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

furnishes evidence that the Y-chromosome type of inheritance occurs in man as well as in fishes.

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JUNE 3, 1922

THE VOCABULARY OF METABOLISM

I wish to suggest in the columns of SCIENCE the following new terms in the vocabulary of metabolism: (1) *Eubolism,* a condition of normal bodily metabolism; (2) *Pathobolism,* a condition of perverted metabolism of a diseased nature, as, for example, diabetes; (3) *Dysbolism,* a condition of disturbed metabolism not necessarily of a diseased nature, as, for example, alkaptonuria. I believe that these terms will supply a want in the terminology of metabolism.

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SALARIES OF PROFESSORS IN POLAND

I TAKE the following item from the weekly news release of June 7 of the Polish Bureau of Information:

Because of the importance attached to their rôle in the life of the nation, the university professors of Poland have been granted salaries greater than those to which their official rank would entitle them. [The official rank of full professors in Polish universities is considered equivalent to that of major generals.]

If they have been in service fifteen years and are supporting families, they are to receive monthly salaries of 139,000 marks. This approximates the salaries of cabinet ministers, who receive about 160,000 marks monthly, and is slightly in excess of those of vice-ministers, who receive, including representation funds, about 137,000 marks.

These salaries for professors have been made possible by a special provision in the state budget, appropriating 357,906,966 marks for professors' salaries and 87,625,761 marks for the salaries of assistants, a total of nearly half a billion marks. [For the value of a Polish mark in American money to-day, consult the morning newspaper.]

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SPECIAL ARTICLES

THE SPIRAL TREND OF INTESTINAL MUSCLE FIBERS

IN the *Anatomical Record* for May, 1921 (Vol. 21, pp. 189-215), Professor Carey published his "Studies on the Structure and Function of the Small Intestine." These were reprinted, in part, with the title, "Studies on the Anatomy and Muscular Action of the Small Intestine," as the opening article of volume 1 of the *Journal of Gastro-Enterology* (July, 1921). The first conclusion, and the only one on which comment is here to be made, is this:

> The inner muscle coat of the small intestine is not composed of circular or annular rings contiguously placed, but is a continuous muscular sheet wound into a close helix. One complete turn is made in every 0.5 to 1 mm. or less (*Anat. Rec.*, p. 193; *Journ. Gastro-Ent.*, p. 9).

Professor Carey characterizes the conception that the inner muscular coat is composed of discrete muscular rings with a certain degree of connection, as "a faulty anatomical heirloom"—an "erroneous idea which arose with the inception of the microscope and has since been accepted unchallenged." There is, however, a neglected anatomical heirloom, with which perhaps the author was unfamiliar, in the form of "A Discourse concerning the Spiral, instead of the supposed Annular, structure of the Fibres of the Intestins; discover'd and shewn by the Learn'd and Inquisitive Dr. William Cole to the Royal Society" (*Phil. Trans.*, 1676, Vol. xi, pp. 603-609). This discourse, not now readily accessible, is so admirably confirmed by Professor Carey's repetition of the work as to repay examination.

At the time of Dr. Cole's studies, Willis, in his *Pharmaceutice rationalis,* published two years previously, had described the interior fibers of the muscular coat as "annular, everywhere girdling in close-set ranks the cavity of the intestines, and inserted into the edge of the mesentery as in a tendon." Overlying these, and "crossing them at right angles," he found straight or longitudinal fibers, and believed that the sinewy outer layer wrapped around them served them in place of tendons. (Earnest efforts were made by the early anatomists to