

the Gila, in December, 1825. He says: "The next morning accompanied by another man I began to ascend the bank of the stream to explore . . . the first day we were fatigued by the difficulty of getting through the high grass which covered the heavily timbered bottom." If Pattie could only see it now!

This same West Fork of the Gila, where Pattie first set foot, is now, within a brief one hundred years, a boulder-strewn stream, where countless cattle have lived and wandered and died since the white man first brought his herds of domestic cattle, in the early eighties. There is now scarcely a vestige of grass for miles, in what Pattie described as the "heavily timbered bottom" and even the cottonwoods and willows have been eaten off or trampled under foot by the constantly moving cattle. The innumerable canyons and arroyos which are tributary to the west Fork of the Gila are deeply scoured by flood waters due to the grazing off of the adjacent hillsides.

Twenty-five years ago, when the writer first saw the West Fork, conditions were worse, if anything, than they are now. The irreparable damage was done when cattle were first crowded on to the range between the years 1885 and 1895. Nat Straw, an old-time prospector and trapper, informed the writer that on his first visit to the region in 1876 (a period of only fifty-one years after Pattie), trout could easily be taken where now there is a sluggish and unshaded stream, filled from bank to bank with flood waters during the summer rainy seasons. The pity of it is that the West Fork of the Gila River is still within an unsettled and undeveloped region. The damage has been done, not by extensive cultivation or by stock owned by many settlers or farmers but for the most part by individual owners of large herds. The Forest Service has long been attempting to better conditions by reducing the size of the herds and by better distribution, but the damage has been done and the remedy, if effective, will never bring the West Fork back to its pristine glory.

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SIZE INHERITANCE

THE inheritance of quantitative characters, particularly of plants, has been explained frequently on the basis of independently inherited, cumulative factors, each of equal weight in determining size. In this hypothesis it is usually further assumed that each factor has one half the effect in the heterozygous condition that it has in the homozygous condition.

Such a hypothesis may be tested directly by determining the correlation between the size character of the F_2 and the F_3 generations. Irrespective of the number of independent, cumulative factors involved in the inheritance of a particular quantitative char-

acter, the correlation coefficient between the F_2 and the F_3 generations for that character will be approximately $+0.816 \pm E_r$. This is based on the assumption that the F_2 individuals tested in F_3 truly represent a random sample of all possible combinations in F_2 and further that each F_2 tested is represented in F_3 by the same number of individuals. The number of individuals necessary in F_3 will, of course, depend on the number of factors involved.

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FUNDAMENTALISM IN NORTH CAROLINA

ON May 4 a semi-political organization of fundamentalists called "The Committee of One Hundred" (one hundred counties in the state) met in Charlotte and passed a lengthy resolution from which the following paragraphs are taken:

We are unalterably opposed to the union of church and state.

Inasmuch as our state supported schools are not permitted to teach the Bible we are strongly opposed to their teaching any doctrine which tends to destroy the faith of our people in the scriptures as the authoritative word of God. We want to emphasize the fact that we are not seeking to cripple any of our state schools but to strengthen them and thereby inspire our people with confidence in said institutions as safe places for our boys and girls.

We hold that it is not sufficient for a teacher to justify himself in his disbelief that the Bible is the word of God upon the ground that he does not teach this in his class, inasmuch as education is by life as well as by lip and by example as well as by precept.

This organization has nothing to do with either denominational schools or those that are privately owned, inasmuch as they are supported by voluntary contributions.

We do not question the right of freedom of thought or research. "We believe in freedom by the truth," and in freedom to search for the truth, but we challenge the right of those in charge of our state schools to employ teachers who hold views fundamentally contrary to the simple teaching of the Bible and force the taxpayer to pay the bills.

The duties of the directors will be to endeavor by conference with proper authorities and by treaty to correct the abuses complained of. In case of failure to accomplish the desired results by conference and treaty it is incumbent upon us to avail ourselves of our constitutional rights and apply to the legislature for redress of our grievances.

The boards of trustees and the administrations of the three state institutions, the University of North Carolina, the North Carolina College for Women and the North Carolina State College, now face a mod-

ern Protestant holy inquisition. It is of course unthinkable that these bodies will in any degree whatsoever meet the desires of the fundamentalists so that the latter will be forced to carry their fight into the legislature of next winter.

Well financed, the Committee of One Hundred has imported fifteen speakers under the direction of Mr. T. T. Martin, head of the Bible Crusaders of America, who will, in addition to local talent, prepare the counties for the June primaries where the next legislature is made. There seems to be little doubt that this theological raid on education in North Carolina will assume much more serious proportions than it did a year and a half ago when an anti-evolution bill met defeat. The Rev. Mr. Martin states that North Carolina is "pivotal" and that if it can be won the nation can be also.

An interesting corollary is a possible paradoxical situation created by the fact that the Baptist and Methodist institutions, Wake Forest and Duke, respectively, are standing firm for freedom of teaching. Thus in case the fundamentalists swamped the state institutions, it would become desirable, to prevent the "ruin of youth," to transfer the young men in the church schools to the "safe" state fundamentalist colleges.

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QUOTATION

LEADERS IN MEDICINE

THE science of medicine has suffered heavy loss by the deaths within the last few days of Sir William Leishman and Sir Frederick Mott. Both were pioneers in the truest sense of that word; in both a lively imagination was disciplined by unswerving fidelity to the truth; to both it was given to render signal service to their generation and to posterity. Leishman was a soldier, and it is not straining the use of language to say that he carried the ideals of his profession into his scientific studies. His work—with Wright—on the prevention of typhoid fever, thanks to which that immemorial scourge of armies was practically eliminated during the Great War, was in its essence a discipline of the natural powers of resistance to disease imposed before inevitable exposure to infection took place. The discipline of the parade-ground aims at a similar if a larger object. The patience and courage necessary to this work on typhoid fever were of the highest order. They were displayed again and again in Leishman's life, and never more conspicuously than in his studies of Kala-azar. This soldier, indeed, took no discharge in the war against disease.

In that respect his service closely resembled Mott's.

The distinguished pathologist of the London County Asylums died, literally, at his post, at a moment when he was pursuing in old age the aims which had fired his youthful enthusiasm. The guiding principle of Mott's life was the determination to discover, if possible, the real causes of insanity. He believed that "mental disease" possesses, in many instances at least, a physical basis, and he worked successfully to justify that faith. His labors, as is now evident, opened a new epoch in the study of lunacy. There are visible to-day powerful stirrings of the old stagnant waters of asylum life. Indeed the very word asylum has been abolished in favor of the more hopeful term "mental hospital." "Hotel-keeping and oratory," as the duties of medical superintendents of those institutions were once cynically defined, have given place to a new interest in research and a new determination to afford to the mentally afflicted all the benefits which are enjoyed by those who are sick in body. This enterprise is still in its earliest phase, but the course of its evolution is no longer in doubt. The debt which humanity owes to Mott is certain, therefore, to increase immeasurably as time goes on. He was a maker of modern medicine, an architect of that healthier and happier future in which he so passionately believed.—*London Times*.

SCIENTIFIC BOOKS

Life and Evolution; an Introduction to General Biology. By S. J. HOLMES. iv + 449 pp., 227 figs. New York, Harcourt, Brace and Co. 1926.

HOLMES has added another to the considerable list of introductory text-books of general biology written by American professors in the last decade. It shows the same tendency that most of them do, to treat the subject more as a physiological and philosophical one than did similar treatises of twenty years ago, with scant attention to morphology and classification, which formed the backbone of biology prior to 1900. The tendency coincides with the direction of growth of the subject and it is natural that this should be emphasized in an up-to-date text-book. But a pedagogic question suggests itself as to whether the older aspects of the subject are not being too much neglected in our elementary biological teaching. Is there such a thing as a biogenetic law governing the acquisition of a knowledge of biology? Should the pupil progress in the order of the developmental stages of the subject? The professors who write the text-books have themselves been well grounded in anatomy, morphology and classification. Will their pupils attain the desired point of view without climbing up this ladder, or may the beginner be taken by the coat collar and