QUOTATIONS

FRONT PAGE SCIENCE[1]

"BLACK RAYS" OF SUN JOLT THEORY OF GRAVITATION

MINNEAPOLIS ENGINEER'S DISCOVERY OF PUSHING, NOT PULLING, FORCE PUZZLES SCIENTISTS

Special Telegram to Public Ledger

MINNEAPOLIS, July 19.—H. J. Smith, an engineer, has physicists here in a quandary and admitting there may be a joker in the Newton theory regarding the forces that keep the earth in its orbit. The quandary is the result of positive demonstrations with what Mr. Smith has termed the hitherto undiscovered "black rays" of the sun.

Science has held that the sun exerts a pulling power on the earth and that this, with centrifugal force, has kept terra firma in its place. Smith set up a delicately constructed weighing instrument with a dial and pointer. The pointer indicated the full rays of the sun seemed to exert a pushing instead of a pulling effect.

Smith called in Dr. Henry A. Erikson, head of the physics department, University of Minnesota, and other scientists, and they could hardly believe their eyes as they saw the mysterious force exert a greater pushing power than ever.

Dr. Erikson at once canceled plans for a vacation and to-day was locked up in his laboratory constructing one of the Smith "attractometers" for a series of experiments. He refuses to give out a statement, but admitted frankly that he can not explain what he has seen and that, if the sun actually is exerting a pushing force on the earth, science has its work cut out to form a theory to take the place of or to at least supplement the Newtonian theory of gravitation.

DEVIL'S GRIP GERM BELIEVED DETECTED

PHILADELPHIA DOCTOR DECLARES MALARIA-LIKE PARASITE IS CARRIED BY MOSQUITOES

QUININE BEST REMEDY YET

DR. JAMES C. SMALL, bacteriologist of the Philadelphia General Hospital, has found what he believes to be the cause of Devil's grip, a disease similar to malaria.

The finding can not be affirmed definitely until more patients suffering with the disease are examined.

Devil's grip, Dr. Small explained, has nothing to do with influenza or la grippe. It is a contagious disease, which causes victims much pain in the chest and the lower ribs. Last year there was an epidemic of the fever in Philadelphia and examinations by Dr. Small disclosed that in each of the cases there were parasites in the blood. These parasites may be caused by mosquito bites or bites of other insects, Dr. Small said.

Parasites are a low form of life which burrow their way into the red blood corpuscles. As one of them grows larger it destroys the corpuscles and other parasites are created.

In his examination of blood specimens of persons affected by the disease, Dr. Small found the parasites were not frequent in the system.

Under a microscope he examined thousands of red blood corpuscles and found parasites in only a few instances.

The disease is not fatal, but causes the victim a great deal of pain for a week or more. The pains first develop in the chest and come on very suddenly. The patient has a high fever for a day. The pains and fever will subside in most cases and then return in four days. Headaches occur constantly and backaches occasionally.

Dr. Small said it had been found that quinine is the best remedy for the pains and fever.

The only case reported this summer was in Huntington, Va., the physician said. An epidemic may occur in Philadelphia later in the summer, he said, but aside from possibility of proving his preliminary findings, he does not feel any great progress can be made toward stopping the disease.

No reason has been found for the pains entering in the region of the chest. The entire blood system is affected, he explained, and for that reason it is strange the pain should be local. X-ray examination of the lungs and chest show no abnormal condition.

[1] From the Philadelphia *Public Ledger* of July 20.

SCIENTIFIC BOOKS

Einführung in Die Allgemeine Kohlenpetrographie. By ROBERT POTONIÉ. Gebruder Borntraeger, Berlin, 1924.

THE present volume will excite probably some surprise among mineralogists and petrographers, since it is written from the botanical standpoint. It marks, however, a tendency which is growing at the present time. The actual study of coal shows that it is a botanical product, and as such can naturally be best treated from the botanical standpoint. The geologists and chemists have in the past not been able to throw a great deal of light on the subject of coal and the present author emphasizes the importance of the botanical viewpoint. He is the son of the late Henry Potonié, who is well known as the author of many and important contributions to the study of coal. The book is distinguished by the large amount of attention which is given to the actual structure of coal, a subject which has been, for obvious reasons, much neglected in the past. The investigations carried on in America have largely obliterated our previous igno-

rance of the structure of coal and the researches of Thiessen, Turner and the reviewer have made clear what was previously a dark subject. The writer has made full use of the American work on coal and his treatment is most appreciative.

The work is divided under a number of headings, namely, "Classifications of coals," "The macroscopic structure of coal and its origin," "The microscopic structure of coal and its origin," "The petrographic constituents of coal," and "The participation of the various substances of the plant and animal body in their organization." The volume contains 271 pages and 80 illustrations, the most of the latter original or from very recent sources. A particularly commendable feature is a large amount of attention given to the micro-chemistry of coal, a subject which the author has made particularly his own and which is of great importance. Naturally, his father's views are treated at considerable length and with respect, but the author nevertheless shows a highly commendable open-mindedness on many subjects. This book will be indispensable to all geologists, chemists and botanists who are interested in the subject of coal.

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Out of the Valley of the Forgotten, or From Trinil to New York. By JOHN EDMISTON BAUMAN, head of the Biology Department, Augustana College, Sioux Falls, South Dakota. Two volumes. Published by the author.

A MOST unique work is Bauman's "Valley of the Forgotten," which may be briefly described as an encyclopedia of deductions from evolution.

The poetic title is thus explained by the author:

> It is intended among other things to show that in the forgotten days of man's early evolution, he went grievously astray in his ideas, falling into progress—and initiative—stupefying superstitions on the one hand and into many irrational ways of looking at the universe in general, and into a not only utterly irrational, but debasing and brutalizing notion of intimate sexual concerns, being shameful and indecent, on the other.

Accepting the known and rationally implied facts of orderly change, termed evolution, which he gives with much care and general accuracy, Professor Bauman sets out to show the relation of evolution to human conduct in all its varied phases. In this he shows broad reading and good judgment, though somewhat disposed to "lay down the law" in disputed questions. He repudiates "fundamentalism," with all its cumbersome traditions, while insisting on his right to be a Christian. He argues for "immortality" on scientific data as well as for the "existence of God." He has much to offer on sex problems, not all of it likely to be generally accepted. His discussions range from the regulation of restaurants, the use of proper nasal sprays and the sins of St. Augustine to bacteria, wicked and benign, to woman's dress, to the abolition of war and to the purification of religious belief. Amidst very much that is true and wise, and as varied as human interests, we stumble on one sentence: "The whole drift of human evolution would be a meaningless and sinister affair if there were to be no future existence."

> I ask for nothing; let the balance fall,
> All that I am or know or may confess
> Swells but the weight of mine Indebtedness!

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SCIENTIFIC APPARATUS AND LABORATORY METHODS

THE PREPARATION OF PROTOZOA FOR CLASS USE

THE rapidity of movement of protozoa makes their study a matter of great difficulty for the beginner, particularly if he is getting acquainted with the use of the microscope at the same time. Identification and careful study likewise are rendered equally trying for the more experienced student. The time-honored method of partially immobilizing the organisms in a viscous medium such as a gum solution or by means of cotton fibers is of great assistance and has the advantage of permitting a study of the living organism. The use of the surface tension, as developed by the microdissectionists, is not feasible for class use unless perhaps as a means of demonstration.

Attention is called to the following method because of the rapidity with which the common protozoa and algae may be prepared for class use. The method is not by any means new, but does not appear to have received the attention it deserves. The material is collected from the aquaria or other source of protozoans by means of a pipette and placed in a centrifuge tube. A hand centrifuge will throw down the organisms within a minute at most, and immediately after the removal of the tube from the centrifuge the greater portion of the superlatent water is pipetted off. A few drops of 1 per cent. osmic acid solution are added so that the resulting solution of osmic acid is about one half per cent. Two cubic centimeters of such a strength of osmic acid will fix a cubic centimeter of precipitated organisms, so that the expense of the reagent is negligible. A few drops of distilled water are added and the material is ready for class use. For continued study a glycerine solution is better. The common fresh water protozoa—