PALEONTOLOGY

More Fossil Footprints

New finds of fossil footprints of extinct animals, indelibly printed on slabs of solid stone, have recently been brought to Washington by G. F. Sturdevant, ranger naturalist of Grand Canyon National Park, and deposited with Dr. Charles W. Gilmore at the U. S. National Museum. One of the specimens is of a greater age than any hitherto discovered at the Grand Canyon, belonging to the Cambrian age, before any four-footed backboned animals had appeared on earth. The tracks are small, sharp prickings in the sandstone, with no trace of toes, and between them trails a sinuous double furrow, as though some part of the animal's body had dragged through the sandy mud. It is probable that the creature that made them belonged to the zoological group now represented

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ENTOMOLOGY

Insect Mutts And Jeffs

Enter the beetle pycnic and the dragon fly asthenic! Not content with dividing men up into digestive, muscular and other types, scientists now classify insect physiognomies according to the same rules.

The "pycnic," says Dr. William Morton Wheeler of the Bussey Institution for Research in Applied Biology, in the Quarterly Review of Biology, is not so called because he likes picnics, though he often does, but from a Greek word meaning compact or thickset. The "asthenics" are the thin, intense, intellectuals with the characteristic lean and hungry aspect Shakespeare attributes to Cassius. In between these, says Dr. Wheeler, are the "athletics," the large class into which fit people with organs of more nearly average development.

Insect Mutts and Jeffs are represented by plenty of chunky, round, "pycnic" beetles, bugs, and moths while "asthenic" grasshoppers, mosquitoes, walking sticks, and dragon flies, he continues, can be found in quantity any summer day. In the insect world as among humans, however, the intermediate types predominate in numbers, "and if I designate this group as athletics," adds Dr. Wheeler, "the economic entomoligsts who spend their lives ardently and often unsuccessfully wrestling with them will certainly not object."

EDUCATION

Exam System Needs Revision

The hated "exam" has been brought under the spotlight by Prof. Ben D. Wood of Columbia University. A survey of examination files of 65 of the best and largest institutions holding membership in the American Association of Collegiate Registrars shows a dire need of reformation in examination systems, he states.

Not only did he learn that examinations are often inaccurately prepared and without expert advice, but he found that the comments put upon the papers by the instructors indicate that they were employing the moralistic, disciplinary powers of examinations rather than their value in measuring achievement.

The survey also showed that there is no basis for comparison of marks in different colleges or even in different departments of the same college, so individual are the methods of making up the examinations, and also of scoring them.

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BIOLOGY

Fishes Eat More when Warm

We eat heavy beefsteak dinners during the cold weather but when summer comes along it is salad and lemonade and the lighter foods that we choose. Not so with the fishes. Unlike the warm-blooded animals, the fishes seem to require more food, rather than less, in warm weather. Experiments testing the appetites of fishes in different temperatures have been performed by Dr. Edward S. Hathaway of Tulane University.

"The fishes used in these experiments were bluegills, pumpkinseeds, and large-mouthed black bass," Dr. Hathaway says. "Fishes which had been living in the laboratory at a temperature of about 68 degrees Fahrenheit were tested for a week at that temperature, and their rate of food consumption was determined. They were then transferred to a temperature of 50 degrees Fahrenheit, at which they were kept for three or four weeks, after which they were returned to the original temperature for two weeks more.

"At the time of transfer from the warmer to the cooler water there was a sudden loss of appetite, the food consumption falling to about one-third the original amount; when the fishes were replaced in the warmer aquaria their rate of food consumption increased again, so that, within two weeks, they equalled or exceeded their original rate.

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HYGIENE

Co-Eds Best Physically

Factory work is apparently no competitor with organized athletics in building up muscles of the feminine physique. Dr. Edward P. Cathcart, professor of chemical physiology at the University of Glasgow, has just conducted a survey of over 3,000 women in factories both here and in London and in the industrial section of the north of England, to determine how heavy a weight women are physically capable of carrying. A group of over 400 college girls examined as controls were relatively taller and heavier than their industrial sisters, he found, and were excelled in strength by only a few physically superior groups in certain industries.

Though scientists have determined down to the last ounce how much a soldier's pack should weigh, there have been no measurements of women made from which social workers could estimate a maximum load for women which should not be exceeded, Dr. Cathcart declared. The average British woman in industry, he has found from the results of his survey, weighs approxi-

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BIOLOGY

"Soft" X-Rays Kill Germs

"Ultra-soft" X-rays, radiations that occupy an intermediate position between the invisible ultra-violet light that lies above the ordinary visible spectrum and the "harder" X-rays ordinarily used in surgery and scientific investigation, have been found to be a potent means for killing bacteria, according to Dr. W. Schepmann of Berlin. Their existence has long been known, Dr. Schepmann states, but their properties have never been thoroughly investigated, especially as concerns their physiological effects.

Ultra-violet rays kill germs in a few seconds, and they have long been employed as germicidal agents, but their penetration into water is so small that their usefulness has been limited. X-rays, on the other hand, have great penetration, but it takes hours for them to kill bacteria. The ultra-soft X-rays are intermediate in both penetration and rapidity of action. They do not penetrate so deeply as the regular X-rays, but they do pierce liquids far enough for practical purposes, and instead of hours they require only minutes for thorough sterilization.

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