

Anniversaries of Science

November 28, 1520.—Magellan completed his passage through the Strait of Magellan and sailed into the Pacific Ocean, which he named.

Facing northward to escape the cold, the explorers encountered such favorable weather that the difficulties and privations they had passed through were well-nigh forgotten. The sudden, violent tempests had given place to steady winds which wafted them on their course over the surface of a placid sea, and thankful for their deliverance from their troubles they gave the name of the Pacific to the vast ocean which had afforded them so friendly a reception. "Well was it named the Pacific," Pigafetta writes, "for during this time (three months and twenty days) we met with no storm."

—Guillemard: *Life of Ferdinand Magellan*.

November 29, 1831.—Michael Faraday wrote to a friend that he had completed his researches on electromagnetic induction. The work done at this time on "electric machines" has directly resulted in the modern dynamo.

No fact is better known to philosophers than the power of the voltaic current to deflect the magnetic needle, and to make magnets according to *certain laws*; and no effect can be more distinctive of an electric current.

—Faraday: *Experimental Researches in Electricity*.

November 30, 1703.—Isaac Newton elected President of the Royal Society.

Newton's honors were now gathering thick around him. On the 30th November, 1703, he was elected, on the retirement of Lord Somers, President of the Royal Society; and he was annually re-elected during the remaining twenty-five years of his life, having held the office for a longer time than any of his predecessors, and longer too than any of his successors, excepting Sir Joseph Banks.

—Brewster: *Memoirs of the Life, Writings and Discoveries of Sir Isaac Newton*.

November 30, 1878.—Crookes sent a paper to the Royal Society with the title: "On the Illumination of Lines of Molecular Pressure and the Trajectory of Molecules."

Crookes' "dark space" of "Molecular disturbance" is, according to modern views, a space filled with negative corpuscles (electrons) projected from the cathode under the influence of electrostatic force. Their velocity increases in their flight along the lines of electric force, and finally their speed suffices to "ionize" or split up the remaining gas molecules into particles or "ions" carrying positive and negative charges respectively. This ionization is attended with the luminosity which limits the dark space. At extreme vacua, the electrons hit the glass walls of the tube, and their impact produces a green or blue fluorescent patch which emits X-rays.

—D'Albe: *Life of Sir William Crookes*.

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ENTOMOLOGY

U. S. Wages Insect War

By L. O. HOWARD

Dr. Howard as chief of the Bureau of Entomology of the U. S. Department of Agriculture is in charge of this nation's offensive against its insect enemies.

The great war which is constantly being fought, not by nation against nation nor race against race, but by man against his eternal enemies the insects, is widening in its scope, is getting more threatening in its aspects. The outlook is dark but not hopeless. It necessitates, however, the widest dissemination of information on conditions and whole-hearted support of research to place mankind in a position to meet the emergency.

The attack of the insects is being made in several directions. It is directly upon our health; upon our food supply, and upon our pocketbooks. Working quietly but incessantly the insects yearly devour \$2,000,000 worth of food, nullify the labor of a million men, and spread disease to many of our kind.

Government funds and the energies of trained men are being expended against these dangerous pests. On the cotton boll weevil, the gypsy moth, the European corn borer and the Japanese beetle—four of the farmer's worst enemies—nearly half of the government's appropriation of \$2,500,000 was spent last year. The results have been telling but the insects have only been retarded in their spread. They have not been wiped out. Aeroplane dusting with arsenate of lime has been effective in the case of the boll weevil; spraying and other methods have helped to hold back the Japanese beetle, and the introduction of the natural enemies of the corn borer, gypsy moth and Japanese beetle, has been of assistance in fighting them.

At least three of the great agricultural machinery manufacturing firms have promised to put on the market this fall devices which will aid in the fight against the corn borer. These devices will cut the corn stalks close to the ground. This procedure is advocated by the Bureau of Entomology because the larva of the corn borer lives for some months in the lower part of the corn stalk. The difficulty is in getting the farmers to change their former methods of farm practice. They are scarcely more ready to take up a new method of cropping than were the cotton growers to use an early maturing seed, force the crop, and destroy the stalks in the fields, the cropping

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Memory Rime

The Descent of Man

First came poor Pithecanthropus, who ranged the jungle raw,
And then the man of Heidelberg, who left naught but a jaw,
Him followed soon the Piltdown man—a strange, aberrant race,
And likely, too, Rhodesian man comes somewhere in this place.
Then came the Type Neanderthal—of fire they knew the use,
And last, the noble Cro-Magnon, the first to woo the Muse.

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method recommended by the Bureau of Entomology years ago.

The necessity for the cooperation of all farmers in better farm practices cannot be over-emphasized. Only by such cooperation can the country hope to curb the onslaught of the rising tide of insects. Through the energies of the quarantine service of the Federal Horticultural Board the dangers of foreign pests have been lessened. But many of these foreign pests are already in the country and there is constant danger from domestic species. Numerous native pests are now under government study and every year brings forth some new danger from an unexpected source. Almost every cultivated crop has some close relatives among the wild plants and no one knows just when some insect that infests the wild plants may turn its attention to some related cultivated plant.

The situation with respect to disease-carrying insects is somewhat different. People will always take more precautions where their lives are endangered than where their property is affected. The campaign against the house-fly and disease-bearing mosquitoes was quickly taken up and the public has cooperated more readily, perhaps, in protecting itself against them than have the farmers against the crop pests. The danger from disease-carrying insects will probably be no greater in the future than it is at present. There is a crying need for a research laboratory for the investigation of the fundamental things in entomology. We should know the fundamental facts in insect life—their vital processes, physiology, and every aspect of their life through all its phases. There are probably five million species of insects of which only about six hundred thousand have been described.

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