STATISTICS

Aircraft Industry Tops With 823,000 on Payrolls

➤ THE AIRCRAFT industry has nosed out automobile makers as the top employer of manufacturing workers in the United States.

Figures compiled by the U. S. Bureau of Labor Statistics show that 823,000 Americans are on the payrolls of aircraft and aircraft parts manufacturers. The automobile industry employs 786,000.

The average weekly earnings for production workers in the aircraft and parts industry is $84.25, compared to $70.71 for all manufacturing industries. These are figures for March, 1954, the latest available.

The blast furnace, steel works and rolling mill industry holds third place with 594,900 workers. Makers of communications equipment, using 503,700 workers, are fourth largest manufacturing employers, and broad-woven fabric mills, with 489,900 on the payrolls, rank fifth.

Including families of workers, it is estimated that 1,900,000 Americans are directly dependent upon the aircraft and parts industry for their livelihood.

The aircraft industry ranked first once before—during World War II—but it fell to 16th place in 1946.

Science News Letter, July 17, 1954

ANTHROPOLOGY

Piltdown Hoax Clumsy, Fresh Evidence Shows

➤ FRESH EVIDENCE of the clumsiness of the Piltdown Man fraud has just reached this country, adding to the wonder of anthropologists that the perpetrator could have "gotten away with it" for so long. (See SNL, Dec. 12, 1953, p. 374.)

Dr. J. S. Weiner of Oxford University and Dr. K. P. Oakley of the British Museum report the new evidence in the *American Journal of Physical Anthropology* (March).

One of the glaring mistakes made by the unknown person who "planted" the modern and doctored ape jaw to lead scientists to presume it belonged to the older Piltdown Man skull fragments was his treatment of a canine tooth. This tooth is badly worn, and examination under a microscope shows fine up and down scratches that could not be produced in normal chewing.

Anthropologists know that apes' teeth wear down in a manner different from that of men, because the ape jaw is fastened differently.

Careful examination of the wear on this canine tooth, however, shows that the pattern is neither man-like nor ape-like, but clearly produced by hand by an abrasive.

Capping this, however, X-ray examination of the tooth showed that it was not yet completely cut through the gums, or had only just recently erupted. How, then, could it have been so badly worn?

When first reports of the "debunking" of Piltdown Man reached this country, anthropologists here were surprised at the statement that the staining of the jaw bone was considered evidence that it was a fake, since it was known that the finder, Dawson, had dipped the bone fragments in potassium dichromate not with the idea of any deception, but for the purpose of preventing deterioration. Now this is explained.

Prof. A. S. Woodward, in whose presence Dawson found the jaw bone, reported at the time that Dawson did not dip that particular bone. Yet the jaw bone is chromate stained, indicating that it was treated before it was found and, therefore, that it had been planted.

Rumors now reaching this country reveal that when the Piltdown hoax was exposed at the meeting of the Geological Society of London in November, 1953, it precipitated a violent discussion, with an old gentleman named Marston coming quickly to the defense of Dawson who had been his personal friend.

The meeting soon broke up into a series of fist fights, so strong was the feeling on both sides of the question. The fracas resulted in the expulsion of several members of the dignified scientific body.

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PHYSICAL CHEMISTRY

Hot Carbon Atoms Made From Nitrogen

➤ A QUICK, easy way to prepare chemicals containing radioactive carbon, widely used in medical and technical research, by transforming nitrogen compounds in an atomic pile is announced by the Institute of Nuclear Studies in Chicago.

Aniline, a compound containing nitrogen, when mixed with the hydrocarbon, pentane, and irradiated in the heavy water pile at the Argonne National Laboratory, yields heavier hydrocarbons that contain radioactive carbon atoms.

These radioactive carbons are formed by the transmutation of the nitrogen in the aniline.

This new method of making radioactive carbon tracer compounds is announced by Ariel G. Schrodt and Dr. Willard F. Libby of the University of Chicago in the *Journal of the American Chemical Society* (June 5).

Radioactive samples of heavy lubricating oils could be made very simply by this process, the authors believe. The nitrogen-containing compound would merely be irradiated for the proper time, then separated by distillation into the series of radioactive products.

These products could be used to determine what becomes of lubricating oils in automobiles, trucks or machinery under various kinds of operating conditions.

Making the radioactive tracers from nitrogen compounds in the pile would be at least as cheap as making them by any chemical means, the two University of Chicago chemists say.

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IN SCIEN

ECOLOGY

Whoo Says Gopher Traps Are Made, Not Born?

➤ ARE GOPHERS and mice plaguing your garden or farm? If so, attract barn owls to your farm and your days of setting out traps and poison are over.

According to J. W. Garlinghouse of the Soil Conservation Service, barn owls will quickly and efficiently solve your mouse and gopher problems. They also will destroy rats, moles, ground squirrels and brush rabbits.

Mr. Garlinghouse reports that Arthur H. Anthony, an avocado grower in Fallbrook, Calif., erected houses for these night birds throughout his orchards. The parents of one brood Mr. Anthony watched carried freshly caught rodents to their brood on the average of one every 20 minutes during nightly hunts.

The owls have not preyed on the birds or fowls which roam freely on the ranch, Mr. Garlinghouse reports in "Soil Conservation."

Mr. Anthony makes an owl house from a four-foot hollow log, at least 18 inches in inside diameter. He closes one end of the log and firmly fastens the log on a 10-foot pole.

No two houses are placed closer than 500 feet because each pair of owls requires about 10 acres of hunting ground.

A little over three months after one nest was found to be occupied by an owl family, Mr. Anthony came up with this tally of "leftover" skulls beneath the nest: 94 gophers, 89 mice, 27 kangaroo rats, seven moles, four ground squirrels, three brush rabbits and 17 unidentified mammals.

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OPHTHALMOLOGY

Syphilitic Eye Disease Is Cured by Cortisone

➤ CORTISONE, ADRENAL gland hormone famous for relieving painful, crippling arthritis, has been found good medicine for interstitial keratitis, an eye disease of congenital syphilis.

Cortisone treatment has changed this from "a long and painful illness" with resulting defective vision or blindness to an acute condition lasting only a few days, Dr. D. P. North of St. Mary's Hospital, London, reports to the *British Medical Journal* (July 3).

If treatment can be started early enough, eyesight need not be impaired at any time, Dr. North states. Except for very acute cases, patients can be treated as out-patients without need for staying in the hospital.

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SCIENCE FIELDS

TECHNOLOGY

British Developing Paint For High-Speed Aircraft

➤ A PAINT that sticks to planes flying near the speed of sound is being developed in London for the Royal Air Force.

Based on epoxy-type plastic resins, the paint withstands heat generated by air friction at these high speeds. It also presents a smooth finish aerodynamically, which may give one fighter plane a 20-mile-an-hour edge over another.

Used with a lightweight primer, two coats will yield adequate protection for the plane. It withstands temperatures up to 400 degrees Fahrenheit, which is the temperature near the exhausts of the latest jet engines. It resists spilled jet fuels, lubricants and hydraulic fluids that attack some other paints.

Developed by Cellon, the paint was rigorously tested at the company's factory near London. It also has been tried on the tail of an RAF craft, and will shortly be used to cover a complete jet plane.

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DENTISTRY

Teeth Drilled Painlessly By Noiseless Ultrasonics

➤ ULTRASONIC TEETH drilling without pain and audible sound has been demonstrated successfully upon human patients. The new method of preparing cavities promises to be an answer to the long search for a painless and vibrationless drill to make the dentist's chair less uninviting.

Clinical work on the new Cavitron instrument was done at Columbia University's School of Dental and Oral Surgery by Drs. Carl R. Oman and Edmund Appelbaum whose preliminary report appears in the *New York State Dental Journal* (July).

Applying a machine tool used for precision cutting of metals and hard minerals, the new dental "drill" is a device vibrated electromagnetically a distance less than a thousandth of an inch 29,000 times a second. This sets up vibrations in the cutting liquid, the particles of which do the actual wearing away of the tooth material.

No burr grinds against the tooth as in the conventional dental drill. The ultrasonic drill will not cut soft tissues and a finger or part of the gum is harmlessly vibrated by it.

Patients had cavities prepared with ultrasonic tools, with the following comments:

"No pain experienced although the tooth was originally sensitive to cold, heat and scraping with hand instruments."

"No pain whatever and the vibration of the instrument was described as 'soothing.'"

Dental school staff members tried the new tool on their own teeth and found that "the sensation of vibration and annoyance was practically absent."

The new technique can make cuts of predetermined shapes and sizes with high precision, which may make possible the pre-fabrication of inlays for tooth cavities.

Fear of the dental chair will be reduced if the new drilling method becomes used by the dental profession routinely.

The clinical work at Columbia will be extended, and the Cavitron Corporation is making instruments available to dental schools throughout the country for further experimental work. The U. S. Navy and the Royal Air Force in England have done preliminary work in the laboratory and on animals.

Science News Letter, July 17, 1954

MEDICINE

Better Drug Reported For Myasthenia Gravis

➤ A SUPERIOR drug for treatment of myasthenia gravis, a paralysis of muscles, particularly of the face, is reported in the *Journal of the American Medical Association* (July 10) by Drs. Kermit E. Osserman, Paul Teng and Lawrence I. Kaplan of Mount Sinai Hospital, New York.

The clinical trials of Mestinon bromide, or pyridostigmine, showed that this drug had fewer side reactions and, in some cases, was more effective than neostigmine, which at present is the drug of choice in treating this disease.

The physicians believe that Mestinon is a step forward in the research for the ideal therapy for myasthenia gravis, but it is not the long-acting drug which medical research is continuing to seek.

The source of the Mestinon bromide used in treating their 20 patients was Hoffmann-La Roche, Inc.

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OCEANOGRAPHY

Seaweed Invades Texas Gulf Coast Beaches

➤ SEAWEED IS invading the beaches of the Texas Gulf Coast to a degree that has local residents greatly disturbed. In many areas motor boats are practically useless, and swimming has become something less than a pleasure.

Local observers call the situation worse than at any time in the last 20 years.

Most of the seaweed is the brown, sargassum type that floats freely in the water without rooting itself to the ocean floor. Unusual winds and currents have swept these exceptionally large amounts of seaweed into the Gulf, Navy experts reported after visiting the area.

Officials feel the situation may be part of a natural cycle of water conditions. They anticipate no unusual seaweed problem next year.

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MEDICINE

Sclerosis Society Seeks Afflicted Twins for Study

➤ WANTED: IDENTICAL twins, one healthy, one afflicted with multiple sclerosis, for medical research probing the cause of this "young adult" disease.

This appeal has been made by the National Multiple Sclerosis Society as the first step in a research program aimed at tracing the hereditary and environmental causes of MS, a crippling disease that frequently attacks persons in the 20 to 40 age bracket.

The ideal "find," the Society said, would be identical twins, one of whom has been afflicted with MS and the other has not, although identical twins who both have the disease can also be used. Scientists would study both twins to try to learn what caused the diseased twin to succumb to MS.

Identical twins are most desirable because they are of the same sex, and similar in most physical characteristics, personality and intellectual traits. Fraternal twins can be of different sexes and may bear no closer relation to each other than any other brother and sister.

Although the Society is seeking identical twins for its research project, it would like to hear of all cases of twins afflicted with multiple sclerosis, as well as cases in which the disease has attacked more than one person in a family. The Society said letters should be addressed to them at 270 Park Avenue, New York 17, N. Y.

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ORNITHOLOGY

Mourning Dove Goes Days Without Water

➤ THE CAMEL does not have much on the western mourning dove when it comes to going without water.

Drs. George Bartholomew and William Dawson, zoologists of the University of California at Los Angeles, have found that the mourning dove, when temperatures are moderate, can go four or five days without water or succulent food and suffer no ill effects. Even in the hottest weather, it needs to drink but once a day.

They have made a special study of the bird, one of the most abundant on southwestern deserts.

The bird can drink in 10 minutes an amount of water equivalent to over 17% of its body weight. This capacity apparently enables it to drink all the water needed to eliminate any water deficits acquired during the preceding 24 to 48 hours.

The mourning dove's ability to endure dehydration and elevated body temperatures, to make up water deficits quickly and to fly long distances make it especially suited for its hot, dry environment.

Desert doves do not hesitate to bring more doves into their barren world. A single pair may produce as many as six broods during the hot spring and summer months.

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