AERONAUTICS

"Basket Weave" Airplane In Large Scale Production

GREAT BRITAIN'S "basket weave" bomber — the Vickers Wellington bomber which is built on the radically new geodetic principle of aircraft construction, and which can carry an unusually heavy load for its weight or travel an unusual distance—is now in large scale production in a factory at Brooklands, the Society of British Aircraft Constructors reports.

By using a "basket weave" structure unusual lightness and strength are achieved. Three single-motored Vickers Wellesley bombers of similar construction, but an earlier type, hold the world's distance record of more than 7,100 miles. The twin-engined Wellington could travel 10,000 miles nonstop if specially prepared for a long journey, the Society quotes the Vickers people as saying.

The Wellington has a range of 3,142 miles in still air with full military load. It could bomb an objective more than 1200 miles away and return and still have an allowance for bad weather or ducking enemy fighting planes. Top speed is 265 miles an hour.

Production of small "basket weave" planes has just begun in the United States.

Science News Letter, July 29, 1939

PUBLIC HEALTH

High Infant Mortality Challenges Educators

THE high infant deathrate in the United States may be looked on as a challenge to those engaged in educating the layman or conveying information to him on matters affecting health. If present knowledge of infant care were enthusiastically and competently applied, the deathrate of infants under one year of age could be cut to 25 per 1,000 live births, it is stated by competent authorities.

The helplessness of infants which makes them so appealing to most adults makes the infants completely dependent for their very survival on the care of their mothers or other interested persons. But though the maternal instinct to care for the infant may awaken spontaneously, the experience of childbirth, by itself, does not bring the mother the knowledge she needs to give her baby the best possible chance for surviving the hazards of its first year of life.

"This knowledge," the Metropolitan Life Insurance Company's health experts say, "the mother can gain only from sources available to her from public or private agencies that make it their business to disseminate the latest advances in prenatal and neonatal care."

The variations in infant mortality in different parts of the country, according to these authorities, reflect the extent to which such information regarding care of the mother before the baby's birth and care of the infant himself is dispersed among the people at large.

In New Mexico, for example, the infant mortality is fully three times as great as in Oregon, indicating probably that mothers in New Mexico have not nearly the opportunity to learn about child care that Oregon mothers have. New Mexico has the poorest infant mortality and Oregon the best in the nation. But even Oregon is fully 30 per cent higher in its infant mortality rate than New Zealand.

Not only do some states have much higher infant deathrates than others, but those with the highest rates and greatest opportunity for improvement have not shown the greatest improvements, comparison of statistics showed.

Science News Letter, July 29, 1939

PHYSIOLOGY

Anti-Blood Clotting Stuff Depends on Blood Unknown

HEPARIN, recently hailed as an anti-blood clotting substance that might prove valuable in preventing fatal blood clots which occasionally follow surgical operations, cannot by itself prevent the clotting of blood, it appears from the latest report on the subject. Heparin's anti-clotting activity is due to the presence with it of as yet undiscovered substances in blood serum and plasma, Dr. Tage Astrup, of the Carlsberg Foundation, Copenhagen, concludes from investigations (*Science,* July 14).

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PUBLIC HEALTH—BOTANY

Hay Fever Victims' Menace Shed Freely by Ragweed

See Front Cover

GIANT RAGWEED is one of the most abundant and widely distributed of American weeds—as millions of hay fever sufferers can tearfully testify.

The polleny picture on the front cover of this week's SCIENCE NEWS LETTER was snapped by Dr. R. P. Wodehouse of Yonkers, N. Y.

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IN SCIENC

ARCHAEOLOGY

St. Paul's Homeland Outranks Egypt in Age

CILICIA, homeland of the Bible's greatest traveler, St. Paul, is coming into the news.

But it is not the Cilicia of Paul's boyhood that is being rediscovered. British archaeologists are digging deeper into history and bringing to light settlements built 3,600 years and more before Paul was born "Saul" of Tarsus.

In surprise, they report that civilization was advanced in this southern corner of Asia Minor when Crete, Egypt, and Babylonia were in their infancy.

A mound 70 feet high at Mersin, in Cilicia, not many miles from Tarsus, is where the University of Liverpool expedition is probing layer upon layer of ruins. Having dug through 16 separate levels of human occupation, they have reached well preserved remains of a fortified city. It stood about 3,600 years before Christ. Its people built skillfully with mud brick. They plastered their walls, and roofed their houses with timber from the mountain slopes. Defense problems absorbed them. Some rooms excavated seem to be quarters of married soldiers, judging by domestic equipment and clay sling shots and the provision for fighting through slits in the walls.

The city lies buried so deep that a Hittite fortress of 1300 B. C. left its ruins fully 20 feet higher in the mound.

And still the expedition has cut its way only through the upper half of the mound. To satisfy curiosity, soundings have been made into lower levels, and the whole mound is found to be an archaeological "cake" of layered remains.

As early as 6000 B. C. Stone Age people settled at this site. These pioneers were in the New Stone Age of cultural history, in which men discovered how to polish stone tools and became farmers and pottery makers.

Paul, who doubtless saw this mound, could never have dreamed of its story. It is taking all the technical resources and scientific knowledge of a scientific age to give back to various countries of the world their whole record of beginnings and progress.

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E FIELDS

INVENTION

New Incandescent Lamp Has Extremely Long Life

A NEW incandescent lamp having remarkably high efficiency and extremely long life has just been patented in the United States by two Dutch scientists, Johannes A. M. van Liempt and Willem Elenbaas of Eindhoven, Netherlands.

The new lamp circumvents the troubles of existing tungsten filament lights which develop hot spots in the filament, evaporate off the tungsten and thus burn out even though much of the filament is still left after the break that ends the bulb's life.

Ordinary bulbs pass electric current through the filament wire which glows to incandescence. The narrowest parts of the filament are hotter than the other parts and tend to evaporate off the metal more rapidly. While filaments are made as uniform in size as possible variations exist which promote metallic evaporation that blackens the bulb and finally breaks the filament.

In the new bulb the glowing incandescent part is a small, hollow body of refractory material, like tantalum chloride or boron nitride, whose melting point is above 5,432 degrees Fahrenheit. Within the hollow space an electrical discharge is created which indirectly heats the walls to incandescence.

By this system a much more uniform heating is obtained, claims the patent (No. 2,164,183). With the new lamp—assigned to the General Electric Company—it is possible to get either long life with the same electrical load on the lamp, or get much brighter illumination for equal life with present lamps. The bulbs must be filled with an inert gas such as nitrogen, argon, krypton or xenon.

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GENERAL SCIENCE

Survey Contributions Of Amateur Scientists

DISCOVERIES and research contributions in science made by non-professional scientists are being surveyed for the Philadelphia area by a newly established Committee on Education and Participation in Science, operating under the supervision of the American Philosophical Society, with funds provided by the Carnegie Corporation of New York.

Chairman of the new committee is Dr. Edwin G. Conklin, emeritus professor of biology at Princeton University, executive vice president of the American Philosophical Society, and president of Science Service.

Choice of the Philadelphia region as the "sample" area to be studied for contributions of amateur investigators is regarded by professional scientists as a happy one. In colonial and early national days, Philadelphia was not only the metropolis of the country but the scientific capital as well.

An outstanding leader among the brilliant scientific amateurs of those times was Benjamin Franklin himself, founder of the American Philosophical Society, whose scientific and inventive activities ranged all the way from proving the electrical nature of lightning and suggesting the basis of modern weather forecasting to the invention of an improved heating stove.

The survey will be conducted by an executive staff of scientific consultants. It will study educational programs already in progress in many institutions and will also determine the contribution made by about 180 amateur organizations in the Philadelphia area, including astronomers, telescope makers, natural history and hiking clubs, photographic groups and others. Special emphasis will be placed on the participation of persons in discussion forums, laboratory courses, museum tours and field trips.

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BIOLOGY

New Artificial Cell Works Like Living One

AN ARTIFICIAL cell that duplicates the ability of living membranes to allow passage of either water or fat solutions was reported to the American Chemical Society's Sixteenth Colloid Symposium at Stanford University by Prof. Harry N. Holmes of Oberlin College.

Giving hope of better understanding of how the living cell operates, the working model is a bag made of 1% lecithin, fat-like substance found in egg yolk, brain and nerves, dissolved in collodion (cellulose nitrate).

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PSYCHOLOGY

Babies Spoiled by Neglect, Never by Too Much Love

MOTHERS, and grandmothers too, can stop worrying about spoiling the baby.

Reassurance comes from a psychiatrist who has tried to salvage many a spoiled child. Never was a child spoiled through too much affection, too much attention, too much fondling, declares Dr. Lauretta Bender, senior psychiatrist in charge of the children's observation ward, Bellevue Hospital (*American Journal of Orthopsychiatry,* July).

Children, this expert has found, are spoiled by neglect and lack of love and by self-centered parents who "indulge themselves by giving the child attention when it pleases them and holding it back when it displeases them . . . who admire the child not for its own sake but for theirs."

Psychopathic personalities, those distorted personalities so common among criminals and delinquents and generally among social misfits are built by lack of parental love.

"Children who are raised in institutions or have no parents, or who lose both parents early, develop into what we call psychopathic personalities," Dr. Bender said.

"They remain infantile, they satisfy their immediate impulse, throw temper tantrums to get what they want, etc. They are extremely overactive, never able to feel they have satisfied their drive for over-activity and settle down to constructive patterns or social behavior. They are absolutely without any sense of right or wrong, breaking up things, abusing the rights of others and, later, satisfying sexual drives at the infantile level. They find it hard to adjust to a school program or work program. Especially, there is no one in the world they care for and they cannot learn to care for anyone because they have never learned to love an affectionate mother in infancy."

Clock-work schedules are very fine for babies, Dr. Bender explains. Babies are happier when the natural rhythms of their bodies are matched by an orderly regime.

But don't treat the baby as a machine. Don't leave him alone with an inanimate bottle for sole comfort. Babies can be lonely and frightened. They need constant companionship, reassurance, and love.

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