rent is supplied from two six-volt batteries.

A lure, in the shape of a wooden figure of a deep-sea fish, is suspended in front of the camera, to coax hungry deep-sea predators to attack it, and thus come within camera range.

Operation is entirely automatic, and the "shots" have to be made entirely by chance. If no subjects happen to be in front of the lens, of course a blank frame on the film results. However, it is possible to make so many exposures on a reel of film that this is a matter of no great consequence.

Describing his apparatus (*Science*, Aug. 25), Prof. Harvey states that he sent it down for five descents in the deep water off Bermuda. The mechanism operated successfully, but got no pictures of any large fish or other marine animals. The only objects recorded were 17 small organisms of some kind that swam across the field during one of the runs, but they were not large enough to be identified.

Science News Letter, September 9, 1939

PUBLIC HEALTH

Size of Families a Factor Affecting TB Decline

A NEWLY discovered factor in the tuberculosis deathrate which has been continuing over a long period of years has been brought to light by Miss Jean Downes of the Milbank Memorial Fund. This factor, it appears, will in the future continue to play an increasingly important part in the continued decline in tuberculosis mortality.

The new factor Miss Downes has discovered has to do with the effect of tuberculosis on the size of the family unit. The family unit in her studies consisted of mother, father and children. When one of the parents had tuberculosis, the family had fewer children than non-tuberculous families did. The tuberculous family's size was further reduced by earlier deaths of its members.

This tendency of the tuberculous family to be eliminated more rapidly, through the combination of lower fertility and excessively high mortality of offspring, has contributed to the decline in the tuberculosis death rate, Miss Downes believes.

Since limitation of births among the tuberculous is now being encouraged as a health measure for the tuberculous, Miss Downes says that if in the future there is no marked change in the hazard of death and disease to the offspring of the tuberculous, the size of the family unit among the tuberculous will play an increasingly important part in decline in mortality from this disease.

Her conclusions were drawn from a study of family histories in a rural area of Cattaraugus County, N. Y. She found about the same difference in average size of families between tuberculous and the group as a whole in both the nineteenth and twentieth centuries. Among families in which all children were born before 1901, for example, at the end of 25 years of married life 100 women in tuberculous families had borne on an average 481 children compared with an average of 526 children per 100 women in the general group of families. During the period from 1900 to 1929, after 16 years of married life 100 women in the tuberculous families had had on an average 261 children compared with 375 for the 100 unselected women.

Science News Letter, September 9, 1939

CHEMISTRY

Chemists to Honor Charles Goodyear

THE NATION'S chemists gathered in Boston on September 11 at the meeting of the American Chemical Society to honor the 100th anniversary of Charles Goodyear's discovery, in 1839, of the use of heat to vulcanize rubber. A special symposium served as a sounding board of discovery which harks back to Goodyear's success, a century ago, of turning sticky, tacky "India Rubber" into a tough, pliable and valuable article of commerce.

While chemistry played its role in the first fabrication of a useful rubber, Goodyear himself was the first to claim that his discovery was not the result of scientific investigation.

Said Goodyear, "While the inventor (Goodyear) admits that these discoveries were not the result of scientific chemical investigations, he is not willing to admit that they were the result of what is commonly termed accident; he claims them to be the result of the closest application and observation."

Much folklore surrounds Goodyear's discovery but the actual sequence of events was fairly simple. By using sulfur to take the stickiness off rubber articles the inventor interested the Post Office in ordering 150 mail pouches.

The bags were fabricated and seemed perfect. In a final test they were hung by their handles but soon were on the floor and others, not yet fallen, were in a sorry condition.

Suspecting heat might be the cause of the decomposition Goodyear experimented with sulfurized rubber. When touched to a red hot stove such rubber charred like leather instead of melting as would untreated rubber. From this Goodyear rightly inferred that if the charring could be stopped at the right point the whole mass of rubber would be "cured", remain elastic and not be sticky.

This idea he verified by discovering that rubber could not be melted in a bath of molten sulfur but only charred. Always, beneath the charred surface, he found a tiny layer where the rubber was perfectly cured. It was this significant finding, made just a 100 years ago, on which rests the great world-wide rubber industry of today.

Science News Letter, September 9, 1939

When laminated glass was first patented in England in 1885, the idea was not safety, but the decorative feature of colored glass between clear sheets.