

the offspring of one crossing of green-leaved parents. Bred further, the yellow-green color persisted through several generations, yet when the new strain was inbred it never produced uniform offspring of its own kind—there was always a mixture of fully green-leaved plants, and in larger proportion than Mendel's law affords.

A similarly anomalous genetical behavior was once observed in the case of a strain of yellow mice, that could not produce wholly yellow families.

Science News Letter, May 1, 1937

PUBLIC HEALTH

Health Authorities Fight New Yellow Fever Threat

FIVE steps to be taken immediately to fight off the yellow fever menace which now threatens the country were advocated by the Conference of State and Territorial Health Officers with the U. S. Public Health Service.

A national law prohibiting the establishment or maintenance of airports of entry within 20 miles of any community in which the yellow fever mosquito is prevalent is one of the measures recommended to fight the yellow fever menace which threatens because air travel is bringing yellow fever infested regions of South America dangerously near to this country.

In addition to this measure the federal health service was urged to develop detailed procedure for immediately controlling yellow fever in a community and preventing its spread upon discovery of a single case.

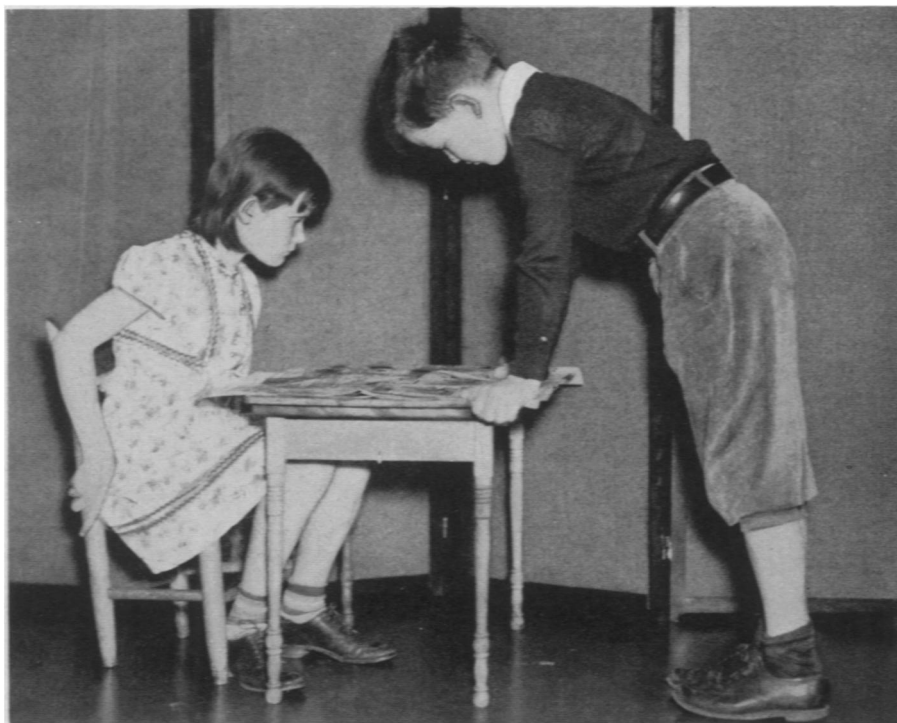
Other steps to be taken include eradication of the yellow fever mosquito from communities adjacent to airports and withholding permits for airports of entry from communities in infectible territory unless the adjacent communities institute adequate measures to control the yellow fever mosquito.

Immediate action was urged upon the conference by Surgeon General Thomas Parran.

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A Japanese physician has taken X-ray sound moving pictures of heart and lungs in both healthy and sick persons.

A bronze plaque discovered at San Francisco Bay appears to be a record that Sir Francis Drake left there in 1579, and if proved true this would show that the bay was discovered by Drake, not by Portola in 1769.



PUTTING STRAIN ON CLOTHES

A boy may stand soldier-straight to have his new suit fitted. But in the real business of play he bends and twists, and clothes have to keep up with him—or else.

ANTHROPOMETRY

To Measure 100,000 Children For Correct Clothing Sizes

Home Economics Bureau Experts Plan Survey To Show How Children Actually Fill Out Clothes During Wear

By **EMILY C. DAVIS**

ARE children big for their age? It sounds ridiculous. But listen to proud parents talking about Mary, who is so big for her age she wears six-year-old dresses, though she is just four. And Dicky—he lives next door to Mary—he's big for his age, too. He wears seven-year-old suits, imagine that, though he won't be five till June! If you went down Mary's street, and knocked at all the doors, you would find a lot more of these youngsters who are "big for their age."

How big are children, anyway?

To get an answer to this question, especially in its relation to the clothes problem, 100,000 American children are to be scientifically measured. For the first time a cross-section of America's

childhood will be measured, not merely for height, but for about 40 traits.

The reason why many children wear clothes so much beyond their age is that manufacturers of clothing do not know how big American children are, in their real and exact proportions. Manufacturers do have sets of statistics on which they base clothing sizes. But many of these are kept secret, and there is no uniformity among different companies. Skimp cutting—saving material here and there by making garments skimpy—is resorted to by some manufacturers.

A bewildered mother finds her Alice-in-Wonderland child, aged nine, may be size ten in one store, size nine in another, and in still another may prove so "big" she has grown right out of the depart-

ment for younger children, and has to be fitted in older sizes.

The new project is to measure normal children aged one to 14 years, in eight different states, and to measure children that come from three levels of economic home life, and children with different racial heritages from the American melting pot.

The project has never been attempted before, says Miss Ruth O'Brien, textile and clothing specialist of the Bureau of Home Economics, U. S. Department of Agriculture, because it is such a huge task, requiring careful organization.

Now it is started, with the Bureau of Home Economics leading the work, in cooperation with institutions in the eight states, and with young people from the National Youth Administration to help in the big fact-and-figure gathering task.

Conferences

At the Bureau of Home Economics, in Washington, D. C., conferences are being held with representatives of the clothing and pattern industries, and with state institutions that have so far lined up for the work.

Six states represented at a recent conference show the variety of these institutions — colleges, experiment stations, child research agencies:

Iowa—Iowa Child Welfare Research Station, State University of Iowa.

New York—Vassar College.

Pennsylvania—Pennsylvania State College.

Kansas—Kansas State College of Agriculture and Applied Science.

Texas—Agricultural Experiment Station, Agricultural and Mechanical College of Texas.

Minnesota—College of Home Economics, University of Minnesota.

The Division of Home Economics of Iowa State College may also take part.

Knees and Elbows

Measurements that will be most useful are now being decided. They will include such figures as waist circumference, knee circumference, shoulder length, slope of shoulder, arm length.

To show what amount of "give" a garment should have for comfort on a lively child, the children will be measured from waist to back of knee while bending forward. Children will also be told to bend one arm akimbo, so that the difference between the straight and bent arm for sleeve purposes can be determined.

All the measurements will be taken with scientific tools (*Turn to Page 286*)

BACTERIOLOGY

Making Diets for Germs Is Complicated Task

THE housewife, suddenly called upon in illness to provide a special diet for some member of her family, thinks she has a difficult job on her hands. Playing dietitian to bacteria is even more of a task. Yet it must be accomplished if scientists are to keep bacteria growing in laboratories for research. These single-celled organisms, many of which make trouble by causing serious diseases, are too small to see without a microscope.

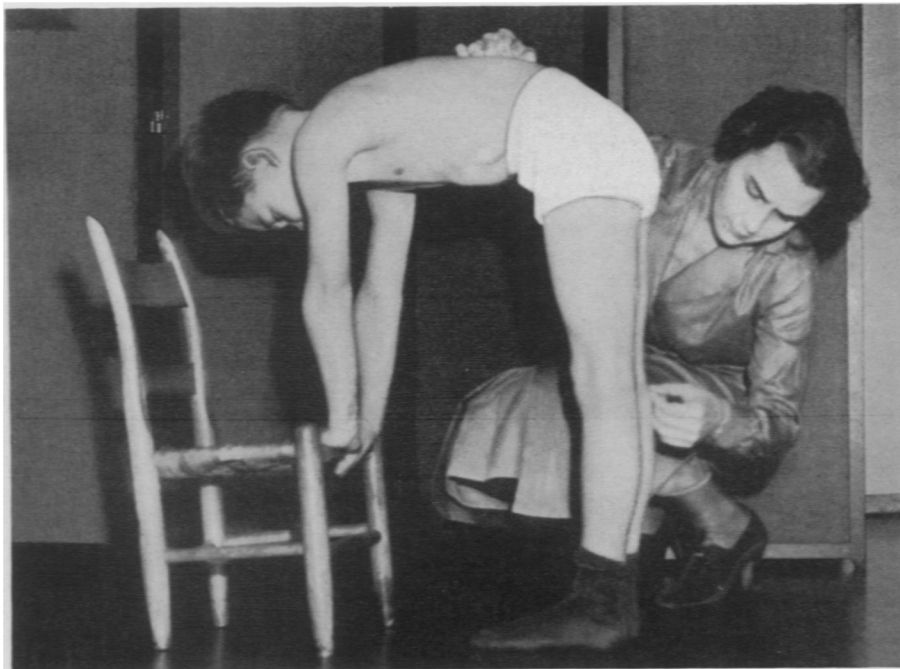
Being made up of only one cell, they are generally regarded as very simple, primitive forms of life. There is nothing simple about their dietary requirements, however. In fact, so fastidious are they that many of them can be identified by the particular kinds of food they require for growth.

Among the indispensable elements in the diet of bacteria are carbon, nitrogen, hydrogen, oxygen and phosphorus. These are the meat and potatoes, so to speak, of bacterial diet. In addition, bacteria require small traces of other substances, such as iron, magnesium, cadmium, manganese, potassium and calcium.

Like humans, bacteria also require vitamins. Yeast, for example, could not be made to grow on synthetic media without the vitamin called bios. More recently, it has been found that a substance called pantothenic acid is active in stimulating the growth of yeast. The diphtheria bacillus requires foodstuff of a vitamin-like character found in meat extract. A substance from molasses acts like a vitamin in the diet of legume nodule bacteria.

Some bacteria can build new tissue from raw material without outside aid, but other bacteria apparently need some ready-prepared foods in their diet. The amino acids, which are the building stones of the protein molecule, are one example of the sort of ready-prepared food required by some bacteria. They are also essential in the diet of man, but while the same amino acids are essential in the diet of all humans, different bacteria have different requirements in this respect also.

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MEASURING A BEND

Dr. Eleanor Hunt, anthropometrist, runs her tape line from waist to back of knee in a position showing the amount of give a boy's garments may need. This measurement is particularly useful to bathing-suit and underwear makers.

The London public can check the accuracy of a ruler or tape line or measuring chain by going to Trafalgar Square and fitting the measure to standards of length marked in bronze on a wall there.

period. In this event, the remaining funds are to be used for fellowships for study of either streptococcus infections in man or of high blood pressure.

The foundation is named for Dr. J. M. T. Finney, eminent Baltimore surgeon, professor emeritus of surgery in the Johns Hopkins University Medical School, and chief consultant in surgery to the A. E. F., and for Dr. William H. Howell, professor emeritus of physiology in the Johns Hopkins University, former director of the Johns Hopkins School of Hygiene and Public Health, and vice president of the board of trustees of Science Service.

Dr. Finney, chairman of the board of directors, has not yet set the date for the board's first meeting and no definite plans beyond those outlined in Dr. Walker's will have been made. According to the will, however, the work of the foundation must be started within one year. First step will probably be to canvass leaders in cancer research all over the world to find which of them need additional men on their staffs to carry forward promising research already under way.

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of the anthropologist—a spreading caliper, anthropometer, and an accurate tape line.

Children are harder to measure than adults, says Dr. Eleanor Hunt, associate anthropometrist in charge of body measurements for the project.

"Children are more flexible, and tend to stretch and wriggle," she finds. "But when they understand the purpose of what we are trying to do, they are usually cooperative. We explain to each child that we are measuring him, or her, in order to make clothing more comfortable to wear. And they understand they are helping to bring this about."

It takes about 20 minutes to measure a child, Dr. Hunt finds. But that does not mean 20 minutes of standing stiffly at attention, or in uncomfortable poses. The children move about a good deal during the measuring, and there is no strain or fatigue.



SO BIG!

For a long time, Miss O'Brien of the Bureau of Home Economics has been saying that American clothes should be made to fit real Americans. The Bureau receives thousands of letters from clothing manufacturers, pattern makers, people who sew clothes at home, and people who buy clothes. For years all these classes have been plaintively asking why sizes of real Americans are not available, so that clothes will fit better.

The clothing industry is still in the experimental stage, as Miss O'Brien sees it. After all, she explains, it is only about a century since clothes were first made in quantities, in the expectation that they would fit unknown individuals who might buy them.

Before that revolutionary idea was launched, clothes had always been either simple draperies or made-to-measure for a given individual, throughout world history. Now an attempt is to be made to bring order out of what is plainly called chaos, for young America, at least.

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Bruising a plant leaf or bending it will greatly increase the plant's respiration, experiments show.

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This common germ produces a poison which has lately been incriminated as the cause of food poisoning. Now the Yale scientists report that this poison, when injected in certain doses into the veins of rabbits, kills the animals in from one and one-half to 20 minutes. Death in these cases was due to poisoning of the heart muscle with resulting failure of its ability to contract and force blood into the body. The fatal doses were from one drop upward for every 2.2 pounds of body weight of the animal.

Ultraviolet Causes Cataract

The gradual hardening of the eye lens as people grow older with the development of farsightedness and even of cataract in old age is the result of the action on the lens of the small amount of ultraviolet light in daylight and artificial light. This theory and experiments supporting it were reported by Drs. W. E. Burge, G. C. Wickwire, H. W. Neild, and F. M. Hilpert of the University of Illinois.

This theory also accounts for the prevalence of cataracts in the tropics, since the sunlight there is relatively rich in ultraviolet radiation.

Chemical reactions in the eye lens under the influence of ultraviolet light produce hardening or calcification of the lens. As a result, it loses the crystal clearness necessary for vision, as in cataract of old age, and cannot be adjusted for seeing near objects. The latter condition is the farsightedness that makes many people over 40 years need glasses for reading.

Experiments with the lens material from pigs' eyes showed that short ultraviolet waves caused the lens material to become electro-negative. Weak solutions of calcium chloride abolish this electro-negativity and sodium phosphate restores it. Calcium and phosphate are both present in the eye lens, so the Illinois scientists assume that the ultraviolet light ionizes the lens material, particularly the phosphate, which then combines with the calcium to precipitate insoluble calcium phosphate. This produces calcification of the lens.

Science News Letter, May 1, 1937

In a ruined palace at Megiddo, Palestine, archaeologists have unearthed a hoard of Egyptian gold objects, apparently buried there in the fourteenth century B. C. when the region was under the Egyptian Empire, near the time of Israelite invasion.

"UNVEILING THE UNIVERSE: WHERE WE ARE—WHAT WE ARE." by Norton Wagner. A popular description of Sun, Moon, Earth (with its eleven motions and Theories of its Origin), Planets, Comets, Meteors, Eclipses, Stars, Novae, Nebulae, Atoms, Constellations, Star Charts, Zodiac Signs, Telescopes, Calendar, etc. Rainbow, Aurora Borealis, and Solar Spectrum in colors. With inspiring, highly instructive non-technical text, profusely illustrated with 550 Drawings, Portraits and up-to-date Photographs, all so graphically described that Amateurs, Students, Boy or Girl Scouts, and all Readers, may readily acquire a visual, comprehensive knowledge of the amazing celestial mystery-bodies that speed through the inky-black vacuum of intensely cold infinite space. *No home or library can be complete without this wonderful educative Picture-Book of the Sky.* A marvelous Gift-Book. Full cloth, only \$1.00 plus 21c stamps. Free Circular. Order now before edition is exhausted.

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