

in everyday life is called lather. On the lather depends the cleansing quality of soap.

It has long been known that dissolving various substances in water changes its surface tension. It has also been known in a relatively vague way what changes took place when particular amounts of a substance were added. But Prof. Hauser and his associates, by examining with their camera the shapes and sizes of drops of these liquids have found out definite things about surface tension.

A viscous or thick liquid, such as the grease that goes into an automobile's springs, doesn't behave at all like a liquid, they discovered. Such liquids have a

marked ability to form threads. Their photographs showed that when glycerine, a liquid used among other things as an anti-freeze, drops from the end of a tube, a tough neck was formed and that many drops "remained joined by practically invisible threads."

Cautiously they say that the ability of viscous liquids to form threads may throw new light on the actual nature of viscosity—an important matter in a world that uses immense quantities of lubricants. From earlier knowledge of how lubricants work has come better and cheaper lubricants; from further study of the new results will come something even better.

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lar kind of mosquito. The malaria plasmodium, and there are three different kinds of these germs, must spend part of their lives in the mosquito's body and part in man's body. The mosquito sucks them up with the blood when she bites a malaria patient or carrier and later transfers them to another victim of her bite.

Knowing this much and knowing the habits of the malaria mosquito, you would think that the disease could be brought under control, practically eradicated. Scientists think so too, but they have been hampered in putting their knowledge to work, chiefly by lack of funds and partly by lack of a unified plan of attack.

Social Security money made available to state health departments from the federal government is now helping out on the financial angle. The plan of attack has been drawn by health authorities of the federal government and of 13 southern states—Missouri, Tennessee, Oklahoma, Kentucky, Arkansas, Mississippi, New Mexico, Alabama, Florida, Georgia, South Carolina, North Carolina and Louisiana. These are the states where most malaria is found in this country. Texas also has a malaria problem, but has already started its own campaign along the same lines as the other states have just adopted.

First step was the training of captains and their aides for the fight. This

PUBLIC HEALTH

School Pupils Shock Troops In Battle Against Malaria

Thousands of Youngsters 6 to 12 Will Each Give a Drop of Blood To Aid in Mapping Areas of Disease

FOUR score warriors in the fight against disease are going forth this fall to do battle against an old, as yet unconquered foe, malaria—the chills and fever plague. And they will be led in battle by hundreds of thousands of little children.

In case you think this old disease enemy has lost its grip, consider the estimates of a national authority on the subject, Dr. Louis L. Williams, Jr., of the U. S. Public Health Service. Dr. Williams believes that there were 4,000,000 cases of malaria last summer. That is ten times as many as the annual number of cancer cases, nearly 600 times the

number of smallpox cases reported annually.

Dr. Williams made it clear that his figure is only an estimate. Malaria cases are not reported with any degree of accuracy—hardly reported at all, in fact. That is one of the things the four score malaria fighters are going to battle. Without knowing how many malaria cases exist, it is hard to lay plans for wiping it out.

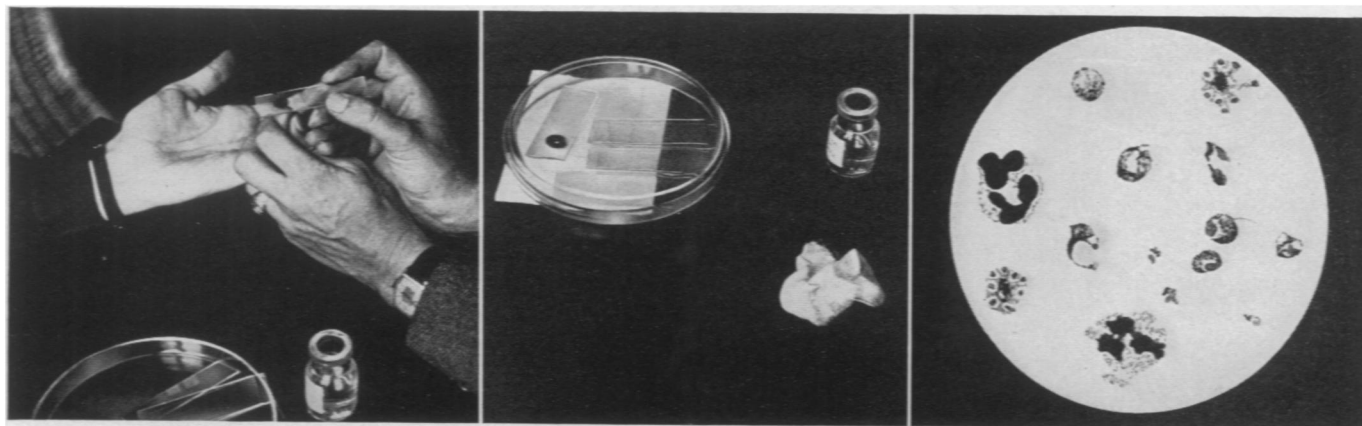
Mosquito Carries Malaria

Malaria is caused by a germ called a plasmodium which, as many a school child now knows, is carried by a particu-

THE TEST

First the finger is cleaned thoroughly with alcohol-dipped gauze. Next the doctor sticks the finger with a long needle sharp enough so that it doesn't hurt. Third, the microscope slide is brought down to the drop of blood so that the surface just touches the top and so that it does not touch the skin.





was done in a special school, the first school for malariologists ever conducted in this country. Dr. Williams occupied the post of principal and the faculty was made up of the following authorities:

Experts Listed

Dr. T. H. D. Griffiths, of the U. S. Public Health Service's malaria laboratory at Savannah, Ga.; Dr. Mark F. Boyd of the Rockefeller Foundation's malaria laboratory at Tallahassee, Fla.; Dr. W. V. King, "mosquito expert" of the U. S. Bureau of Entomology and Plant Quarantine station at Orlando, Fla.; Dr. Eugene L. Bishop, director of health activities of the Tennessee Valley Authority and his assistant, Dr. Robert Watson; and Miss Aime Wilcox, U. S. Public Health Service's expert in the thick film technique by which malaria germs are found in blood.

School is just out for the doctors, entomologists, sanitary engineers and laboratory technicians of state health departments who will wage the new war on malaria. But school has only recently started for thousands of grammar school children in the rural districts of the south and this fact provides the anti-malaria warriors with a chance to fire their opening guns. These little school children will lead the fighters to the strongholds of the malaria mosquitoes.

Must Find Strongholds

Finding these strongholds is the first and most important job for the anti-malaria fighters. Health authorities know that malaria is found chiefly in rural areas and small villages. They know also that there may be much malaria in this county, none in that one, Dr. Williams explained, pointing to one of his maps.

But malaria is not "spread out evenly over a county like butter on bread," he continued. Its particular stronghold in

each county has to be located, and will be located by taking a malaria index of children in the country schools.

The veins of these children are a reservoir for the malaria germs. Older children and grown-ups, probably because they have had malaria so often they can tolerate it better, do not carry the germs in their veins for any length of time. But the 6-to-12-year-olds do.

Starting This Fall

So, starting this fall, which is the season when the malaria plasmodia can be found most readily in the blood of human carriers, county health officers and nurses will go to every rural grammar school and take a drop of blood from the finger of each child.

This blood will be smeared thickly on a glass slide. Blood usually is drawn out very thin for examination under a microscope, but when looking for the malaria germs a thick film is best. The blood spot will be dried and stained and examined under the microscope by the technicians Miss Wilcox has just trained for the work.

When they find malaria germs, that child's name will be noted and one of the newly-trained mosquito experts will go to the child's home and carefully examine the entire neighborhood to find the breeding places of the malaria mosquitoes in that region.

Reports to Engineer

His report will go to the sanitary engineer who plots the mosquito strongholds on his map which also shows the topography of the region and especially the presence of stagnant water—behind dams, in ponds or swimming holes and elsewhere.

The engineer then draws up accurate plans, with complete cost specifications, for malaria control in that region by (1) drainage, which is much the best

REVEALS MALARIA

Important step in the test is movement of the slide round and round to spread the drop over an area equal to a five-cent piece. Next the slide is put under a glass cover to protect it from dust and allowed to dry. After it is dry this "thick" smear is stained and placed under the microscope where, if the child is infected with malaria, it looks something like the final view.

method of mosquito control; (2) larvicides to cut down mosquito breeding by killing the larvae; and (3) screening, which comes off a poor third in controlling mosquitoes and malaria.

With this information, the county and state health officers can sit down and plan their budgets to get the best possible control over the old chills and fever plague. It will be the first time such unified malaria control plans can be carried out and, in Dr. Williams' opinion, will in a short time reduce the amount of malaria in each state "to inconsequential proportions." In other words, the battle will be won and malaria finally conquered on this continent.

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ENGINEERING

Electrical Giants Tested In Quarter-Mile Building

See Front Cover

GIANT generators, each producing enough electricity to light the lamps in a million homes are shown undergoing tests at the Westinghouse East Pittsburgh plant in the illustration on the front cover of this week's SCIENCE NEWS LETTER.

Further down the quarter-mile aisle are other motors and generators taking form.

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