

THE MICROSCOPIC MURDERERS

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taken from the patient's own body (autogenous), and cultivated in beef broth, agar sugar, or gelatin. Then they are killed and injected. Or a serum may be secured from an animal in which the disease has been introduced. By repeated inoculations of the germ of this particular disease the animal develops "immunity," which means that its body cells have elaborated and thrown into the blood such an amount of antitoxin that the parasites are forced to admit that "this is no place for them."

When this substance is separated and injected, it acts upon the leucocyte like a cold bath. Then the phagocyte finds out what dainty morsels these germs really are, and what delicious entrées can be prepared from them, and he "gets busy"—to the great joy and profit of the patient.

This is the principle of Dr. Friedmann's tubercle bacilli culture,—attenuated by being passed through the bodies of turtles and other cold-blooded animals. Friedmann's, however, is unique, because it contemplates injecting living organisms into the system, as in smallpox vaccination, or with the phylacogens.

As there is no way of estimating the potential virility—the reproductive and destructive powers—of these living germs, it is well to be cautious in introducing them to an army of phagocytes, who might refuse to fight. If this tubercle strain will not revert to type, and become vigorous, strong, and prolific like its antecedents, it would undoubtedly serve to stimulate interest, appetite, and increased powers of defense on the part of the leucocytes and body cells.

It seems almost too good to be true, but sooner or later the cure for all parasitic diseases will be found. This is certain.

THE degree of a patient's resistance to disease, then, depends upon the tone of his muscle cells, and their ability to manufacture antitoxin,—for be it known that an individual with well toned muscle cells is practically germ proof,—and upon the number and activity of the little white policemen of the blood, the phagocytes. This resistance can be measured with a marvelous degree of precision by taking a drop of the patient's blood, and inoculating it with germs. His defense can be estimated according to how fast the germs develop, if at all, and how long it takes the phagocytes to kill them off—if they do.

The bacteria are stained; the leucocyte is practically transparent. Consequently, the ingested germs can be counted accurately. The essential thing is to find out how many germs fifty leucocytes will kill in a given time, and compare the result with what fifty taken from a well person will ingest in that same time. This is called the "opsonic index." Of course, all signs fail in dry weather. But if the disease conquers we

have the satisfaction of knowing—as did the Irishman who commented upon the headless condition of the Winged Victory—that "they put up a good fight, anyhow."

Bacteria hate the sunlight. It has a pronounced and deadly effect upon them. Therefore, it is pretty good practice so to regulate the lighting of living rooms that if they contain anything that the germicidal rays of the sun will spoil, take it up to the attic, or give it to someone who is not so particular about its appearance.

And our final word in helping Mr. and Mrs. Bacillus on to that greatly to be desired condition of total extinction is the wonderful effect that the bombardment with particles of electricity or radium has upon them. In superficial conditions, like skin cancer (lupus) or local parasitical eruptions, they are killed in one or two treatments. The cannonading, however, is detrimental to body cells, though in a much lesser degree than it is to germs; so that if it is done, it had better be done quickly. Otherwise the cure is likely to be worse than the disease.

IT has been a marvelous triumph, this conquest of the microscopic murderers of humanity. The kindly faced Semmelweis, who welfared the mothers of men; the learned, quiet-mannered Pasteur, who was worth more to France than a thousand Napoleons or Neys; the scholarly, painstaking Lister, who took the sewer as his text, and wrote his name in gold in its murky depths,—pioneers in this grim battle against the infinitesimal assassins.

Their work has almost placed a capsheaf of perfection upon the science of surgery; for the innermost secrets of Anatomy have been wrested from their hiding places, and dexterity in restoring the injured organism seems almost superhuman. The citadels of life itself—the brain and the heart—have been invaded by cunning fingers, and the damage from wounds and disease repaired.

But before he could venture into these inner temples of the Great Life Force, the scientist had to invoke from the vasty deeps the spirit of the Blessed Sleep—Anesthesia—that God-given boon which permits of the most fearful and dangerous operations being performed while the dreamer sails in imagination to the Lands of the Lotus Eaters. And lastly—Antisepsis and her daughter Asepsis,—without whom the most brilliant and technically perfect operations would end in gangrenous failure. They are all so interrelated, their tendrils of mutuality so closely interwoven, that we now can hardly think of one without bodying forth the others.

Of all the myriads of blessings showered by prodigal Nature upon her children, the greatest, most vital, and most beneficent are the "Three Big A's,"—Anatomy, Anesthesia, and Antisepsis.

THE NEW CONGRESSMAN

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than they used to be. New members, although they may come to Washington with the praises and flattery of their friends and supporters at home still ringing in their ears, and although they may entertain a firm conviction that some day they will be great constructive statesmen, adopt that modest bearing which appeals to the leaders and older members of the House. The young fellow who thinks he can rush to Washington, jump into the thick of the legislative fray, and win a crown of glory for himself during his first session is due to get a distinct shock. As a matter of fact, the best thing he can hope for is a chance to familiarize himself with the public business while looking after the interests of his constituents to the best of his ability. If he makes good on these two propositions, he will have his chance later on.

THE town is full of new Congressmen—and some of them will not come back two years hence. In the House, as in every other large body of men, there are some drop-outs, some who sleep on the sofas in the cloak-rooms, some who devote more time to enjoyment than to hard work. If one of these is your Representative, you can spot him on the instant. You will find that on many votes he is recorded as absent from the House, that he lets four or five days or even a week pass without answering your letters, and that if he introduces bills for the district he does not follow them up and have them enacted into law. Such a man, be he a new member or an old, is not a good Rep-

resentative—and there are mighty few old ones who can hang on without doing their work.

After all is said and done, a new Congressman is like a new boy in a boarding school. He has to find his place, has to learn the ways and habits of his fellows, has to study, and has to find that level to which his industry and brain entitle him. This cannot be done in a day. It requires months of patience and strict application to work. It means that, while he is learning how to help make laws for millions upon millions of people, he must be the dime messenger for all his district. If he is a good politician, he does everything within his power when his friends want it, and he does the same thing for his enemies in the hope of making them his friends. Altogether, he is eight million times busier than a hen with one chicken.

Wherefore, why envy the new Congressman? He has his rewards, it is true, in the consciousness of doing big work and a lot of small work. In every campaign he moves crowd upon crowd with his gift as an orator or his power as a debater. He lives in the limelight of that prominence which comes to everyone in public life. But he pays for it, and if he goes to Congress a poor and honest man, he will come out of it just as honest as he was when he went in, but much poorer. There's no money in politics.

He is more to be pitied than envied. If he stays on his job, he does more work than any other class of men you can possibly imagine. He works for his country, for his district, and for himself. And, as soon as a



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