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SECTION A

Rife Bares Startling New Conceptions Of Disease Germs and Their Activity

By NEWELL JONES

Three new and revolutionary conceptions of disease germs and their activities were disclosed today by Royal Raymond Rife, San Diego scientist, as a climax to years of exploration by him in the mysterious microscopic worlds of these little slayers of men. He:

1—Expanded his previous brief reports of isolation of hitherto unseen, filter-passing viruses to tell of discovery of many kinds of them and to picture them as living entities, rather than mere chemicals, and as players of more extensive and important roles in disease than realized before.

2—Reported discovery that organisms of disease have more forms of their respective kinds than known previously.

3—Announced the startling finding that the organisms radically alter their fundamental biologic characteristics when "fed" upon different substances, actually changing from one thing to another in the case of one type.

Rife's announcements followed his revelation last week of discovery that tuned radio waves will kill organisms of disease, and of improvement of his high-power microscopes, both reported exclusively.

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Adds to Light On Germs and Activities

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sively in The Evening Tribune. As in cautioning last week that he "is not ready to claim 'cures' for disease" through the radio waves, he continued today to offer his reports in the cool, factual manner of scientists. Yet the inferences to be drawn from the reports would imply material alterations of the science of bacteriology.

The San Diego scientist mentioned his bacteriologic findings briefly in reporting his radio wave and microscopic work, because all three were closely linked, each helping to make the other possible. His disclosures today broadened widely the extent and the significance of the bacteriologic discoveries.

Most Astonishing Finding

Perhaps the most astonishing of the newly reported findings was that about alteration of fundamental biologic characteristics of the organisms, although the other two discoveries may have a broader practical importance in bacteriology.

Rife said his research revealed that both bacteria and the viruses associated with them—the small, filter-passing, poisonous agencies somehow linked with bacteria and considered to be more direct, inciting causes of disease than the larger organisms themselves—can be materially changed by changing the media upon which they are cultivated in the laboratory. They actually exhibit changes in metabolism—alterations in the chemical processes distinguishing various forms of organic life, such as man's consumption of oxygen—he reported.

Importance of this disclosure would lie, the scientist said, in the fact that changes involved in the altering of the organisms, are similar to the variations occurring sometimes in metabolism of the human body.

"This," he commented, "might explain why disease bacteria often can be present in our bodies without apparent harm and then suddenly cause illness. Some metabolic change in the human body, corresponding to the changes in the laboratory media, may alter bacteria or their viruses from a harmless to a dangerous state."

In the case of the bacillus of tuberculosis, the San Diegan reported, the change is so radical as to constitute alteration of one thing to another; the organism changes from a bacterial plant to a fungus, to a microscopic form of life corresponding to such visible plant life as molds.

Living Entities

These metabolic activities, coupled with ability of the viruses to multiply in laboratory cultures, Rife added, led him to another important conclusion, the belief that viruses are living entities rather than mere chemicals.

"It has been considered by most research workers," he commented, "that viruses merely are chemical materials. But we believe that the filter-passing bodies which we have isolated are viruses, and in most instances, at least, these bodies seem to be living entities of some kind."

Isolation of filter-passing viruses was, of course, one of the most important steps in Rife's studies. This took years of patient, exhaustive research.

Once, the scientist worked for 7 years straight and grew and studied about 20,000 laboratory cultures in a search for a virus of cancer. He found nothing. Then, he recounted today, he became disgusted and dropped the search temporarily, only to gain success virtually by accident. Now, vigorously pressed in his Pt. Loma laboratory, the hunt for viruses has revealed many, through the use of special means of culture and of his special microscopes.

Among the filter-passing forms he reported isolated were those for cancer, although he frankly declares that he is not yet positive that this is the direct cause of the dread disease; b. coli, the seemingly harmless bacillus which always seems to accompany the harmful typhoid bacillus; tuberculosis, sarcoma, the tumorous disease similar to cancer, but less deadly; infantile paralysis, streptococcus and staphylococcus infections and herpes encephalitis and encephalitis lethargica, both infectious ailments of the brain and nervous system.

Success in the search began to come when Dr. Arthur I. Kendall, head of the department of search bacteriology at Northwestern university medical college, joined him in a phase of the work and suggested a culture medium which proved to be a phase in making the hitherto unseen viruses visible.

Kendall's medium is a mixture of pig intestine and Tyrode solution, the latter a standard mixture of chemicals. Kendall and Rife worked with this medium in the Rife research laboratory on Pt. Loma, in the Northwestern college's laboratory of research bacteriology and in Pasadena hospital's pathological laboratory, where Dr. Milbank Johnson, prominent Los Angeles physician and surgeon, cooperated with them. They inoculated culture tubes of the medium with ordinary typhoid germs. They cultured the materials, carefully triple-filtered them through the finest Berkfeldt porcelain filters, and then examined, under one of Rife's microscopes, the portions which had passed through the filters. In these filtrates they saw small, oval, motile, turquoise-blue bodies.

Reporting the work in the California and Western Medical Journal for December, 1931, the two "surmised that these turquoise-blue bodies are indeed the filter-passing forms of the bacillus typhosus."

Targets of Critics

Some critics attacked the findings, and the Rife microscope with them. Then Dr. E. C. Rosenow, of the famed Mayo clinic's division of experimental bacteriology, joined Rife and Kendall at Northwestern for a review of the typhoid study.

"The oval, motile, turquoise-blue bodies described previously by Kendall and Rife were demonstrated unmistakably," Rosenow reported

ed in the Proceedings of the Staff Meetings of the Mayo Clinic for July 13, 1932.

Moreover, Rosenow defended the Rife microscope and also reported that he, Rife and Kendall later had found filter-passing bodies from streptococcus cultures which might be the viruses, the actual inciting agents, of infantile paralysis and herpes encephalitis.

Rife explained today that the Kendall medium makes it possible to produce the filter-passing forms for study at will by somehow causing the bacteria to assume a "transitional state" in which they shed the smaller bodies which are their viruses. Then, by means of the special illumination and the high magnification in his microscopes, they can be made visible.

But neither the medium nor the microscopes were sufficient alone to reveal the filter-passing organism Rife found in cancers, he recounted. It was an added treatment which he found virtually by chance that finally made this possible, he related. He happened to rest a test tube of cancer culture within the circle of a tubular glass ring filled with argon gas activated by an electrical current, which he had been using in experimenting with electronic bombardment of organisms of disease, he recounted. It happened to rest there about 24 hours, and then he noticed that its appearance seemed to have changed. He studied and tested this phenomenon repeatedly, and finally one day he discovered filter-passing, red-purple granules in the cultures.

Passed through three sets of experimental animals, he reported, the red-purple granules produce tumors typical of cancer.

In the perfected procedure for isolating the red-purple granules, the scientist explains, a culture is first developed in Kendall medium. Then it is subjected to the argon treatment, with the gas-filled tube lighted for 24 hours by a 5000-volt electric current. Next the culture is treated in a water vacuum.

Rife believes that the operation under the gas-filled tube ionizes the cancer material in some way, the treatment in the water vacuum where the material is kept at normal human body temperature, counteracts the ionization by oxidation, and the result of the two processes is that the chemical constituents of the organism are so changed that it is brought within the visible spectrum, when examined in the special illumination of his microscopes.

Moreover, he commented, this special illumination reveals the filter-passing organisms in characteristic, individual colors.

"So far," he related, "no two kinds or forms of organisms have been found to have the same colors. Only one has been found to have dual coloring."

The other organisms, besides those from typhoid fever and cancer; their variations in form and the startling metabolic changes occurring when they are subjected to alterations in their chemical environments, Rife recounted, were revealed as years more of study and experimentation were added.

In the exhausting, painstaking laboratory studies, Rife had, besides the cooperation and counsel of such professional men as Johnson, Rosenow, Kendall, the help of a laboratory assistant, E. S. Free. He and Free almost have lost count of the thousands of cultures of organisms prepared and examined in the search for the viruses.

Besides the work connected with the isolation of the organisms, there were innumerable tests of the infectious qualities of the germs in experimental animals.

Inoculation of experimental animals, Rife commented, has demonstrated the disease-causing properties of each of the viruses for which he claims isolation.

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