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ON THE GERMS OF DISEASE.

THIRTY years ago, what is now known as the germ theory of disease was, to all intents and purposes, unknown. It had been surmised that certain minute animals or bodies invisible to the naked eye were sometimes the cause of disease. Such guesses or assertions, based upon negative reasoning, were made and reiterated in various ways, and found more or less favor all the way along from the time of Terentius Varro, a Latin scholar, who wrote a century before Christ, until the time of Pasteur, who first *demonstrated* the truthfulness of that which had been blindly discussed and believed or disbelieved in, as the case might be. Of course, the microscope, long waited for, revealed to the diligent searcher that which had previously been hidden, and brave men entered into the mysteries revealed and patiently investigated and sought light where before all had been darkness, or at best but dim twilight....

Thirty years! What is now known? It is known that germs exist everywhere. That the air is loaded with them. Not all or many of them are disease producing. That each produces its kind and *only* its kind. That the full development of the germ requires that the parent germ be perfectly developed and be planted upon a proper soil. Sow wheat, and you get wheat, never oats. Sow the germ of diphtheria, and you get diphtheria, and not small-pox. Sow wheat in the sand and it will not germinate, or but imperfectly. Inhale the germs of diphtheria, and unless a lodgment is effected upon a surface adapted to receive it, it will not multiply. Sow an imperfectly developed germ of wheat, a grain harvested before it is ripe, and even under favorable conditions, it will develop but imperfectly, if at all. The same may be said of germs, disease producing or otherwise. Not only are the effects produced by germs of a definite character governed by fixed laws, but, as would naturally be supposed, the germs themselves bear certain individual or physical characteristics, and laborers in this field have a well-defined, intelligible and expressive nomenclature. A germ is a *seed*, as its name implies, yet a micrococcus and a bacteria have as distinct or quite as diverse characteristics as a sweet pea and poppy-seed. Dr. John S. Billings has given the name of microderms, or little living things, to the great variety of microscopic particles found in air and water under ordinary conditions. Under this term, microderms, are included microphites, or little vegetable organisms, the microzoa, or minute animals, the microzymes, or little ferments, the microbes, or little lives, or microbia of Pasteur, the bacteria, etc. The minutest spherical forms of the microderms are know as micrococcus, or little grains, the short cylinders or rods, bacteria, etc. These organisms can be and are cultivated, and spherical forms produce spherical forms, and rods produce rods. It is not worth our while to set forth the arguments pro and con that were formerly used by the advocates and opponents of what was and is known as the germ theory. It is enough to say that within the last decade the labors of Cohn, Virchow and Koch in Germany, Burden-Sanderson and Tyndall in England, and Pasteur in France, have gone far to confirm not only the profession but the laity of the truthfulness of the germ theory. It was maintained, is now by some, we presume, that given heat, moisture, and filth in proper proportions, that disease would spring into