only way yet found to save the animal is by strengthening and increasing the resistance of the host, so that the parasite and its poison may be unable to prevail against it. The eagerly sought-for germicide capable of destroying the parasite without injury to the host has not been discovered, nor is it likely to be.

It probably would interest some of the readers of the Journal to know something about the bacteria, and their relation to disease. The subject is an immense one to deal with in the columns of the Irish Bee Journal, still I think that room may be found for a short resume of the most important fact known, leaving out, of course, many important details.

Bacteria are small vegetable organisms, many of them motile. They are plants, not animals as Leuwenhock, who first saw them through lenses he made himself, imagined, two hundred years ago. Some of them are cells in appearance, and others appear to be solid bodies of different shapes ; but round, thread-like, and short, straight or curved rods, are mostly the shapes in which we find them.

The bacillus alevi, which interests the bee-keeper, is of medium size, rod-like in shape, and four times longer than it is broad, and it would take one hundred and twenty-eight billions of them to equal a worker bee in size. If we placed a bacillus and a bee along side of each other, and wanted to place a body alongside of the bee as much larger than the bee, as the bee is larger than the baccillus, we should have to place a house two hundred feet long, one hundred feet wide, and over fifty-seven and a half feet high ; and if we wished to go on and keep up the proportion we should require one hundred and twenty-eight billion houses for the next body.

There are bacteria beyond the reach of the microscope ; we have evidence of their existence, and power to cause fatal disease in animals and man, but we cannot see them. The bacteria live in water but to one of them a drop is an ocean. They grow on moist surfaces if they can get organic matter to feed upon ; they can stand very low and very high temperatures, and fever in disease, no doubt, has for its object to check the growth of the hostile bacteria. They grow and multiply with wonderful rapidity. They divide by budding, or transversely across their length every hour, and if one bacterium could keep up this division for three days it would convert over seven thousand tons of organic matter into bacteria. They form under certain conditions, spores or seed-like bodies which can withstand boiling water for one or two hours. They can live and grow in the air, and without air, but they cannot grow without moisture. In Western Texas, in America, Mrs Jennie Atchley, a noted bee-keeper and queen raiser, says, that owing to the dryness of the climate foul brood is unknown, and it also said that consumption is unknown among the inhabitants who permanently reside there ; even fresh meat will not putrefy, and can be dried in the sun. The bee-keeper in Ireland has much to contend against in a climate just the opposite.

The bacteria cannot grow and multiply without food material—organic matter—which they change into new and strange compounds, which Dr Sims Woodhead calls products, see Bacteria and their products, page 1[illegible] They are specialized to the production of these products,— one class of bacteria to the process of changing starch or sugar to alcohol, and a