which cultures of bacillus larvae may be obtained in large quantities suitable for experimental inoculation. This medium consists of the sterile filtrate obtained by diluting and filtering the crushed bodies of the bee larvae through a Berkefeld or other fine filter.

(3) American foul brood has been produced by feeding pure cultures of bacillus larvae, and the symptoms of the disease are the same as those produced by feeding the scales of this disease and as those observed in the apiary where colonies are affected with this disease.

(4) The structures described by Dr. Maassen, of Dahlem, Germany, as spirochaetes and named by him Spirochaeta apis are not spirochaetes, but normal structures produced by the growth of bacillus larvae. These are known in bacteriology as giant whips.

Washington, D. C., July 15, 1907.

The Beginner's Page

Department Conducted by E. G. HAND

Preparing for Winter.

Don't put off preparations for winter any longer than can possibly be avoided. The sooner after the white honey harvest is over that the bees are prepared for their winter snooze the better for all concerned, unless, of course, there is a fall flow of honey from buckwheat, golden rod, or some other source. But as a rule the beginner had better not figure on his bees storing honey in September, or August either, for that matter.

The first thing to be done after the supers are removed is to see that each colony has a laying queen and a good number of bees—enough to cover all the combs in an eight-frame hive on a day inclined to be cool will generally make a satisfactory cluster for wintering. To be sure that there is a queen, each hive must be opened and brood looked for. A good queen generally has a certain amount of brood in her hive until the first of October. Look about the centre of the hive, and if a nice patch of sealed brood is seen on two or three frames, or even on one, the colony may be passed as all right in that respect. If a hive is found with no brood, when other hives have a reasonable amount, a search should be made for the queen. If she cannot be found, she is probably not there, but if she is, and is good for anything, her presence can be detected by giving a little feed to the colony in a feeder each evening for a week. This will make the queen commence to lay, and the eggs may be easily seen. Unless a queen is much valued, however, or it is desired to winter as many as possible, it does not pay to spend too much time hunting a queen this time of year. In an apiary of any size, even a small one, there are nearly always a colony or two too light in bees to put into winter, though they may have good queens. When a populous colony is found queenless, unite with one of these small colonies having a good queen, and every thing will be all right. When a colony is found that has been queenless for a long time, so that "laying workers" have made