

On the table before us are a number of specimens of the substances I have named, as well as many others, and I am prepared to show you that they are all charged, more or less, with spontaneously generated peroxide of hydrogen. You will find among them the fat of beef, mutton, and pork, mutton and beef tallow, prepared lard, butter, cod-liver, olive, almond, linseed, cocoa-nut, and palm oils, stearine candles, kerosene, gasoline and benzine, eau de Cologne, eucalyptus oil; the essential oils of juniper and lavender, pieces of Baltic deal, shavings of red deal and American pine, and a bottle of disinfecting furniture polish, composed of linseed oil, oil of turpentine, and eucalyptus oil. I could add largely to this list if it were necessary.

Here is a piece of wood to which the furniture polish has been applied, and, as I think very highly of it as a means of preventing the spread of infectious diseases, I will select it for our first experiment. I may observe that one or two pretty free applications will render furniture, or any other article to which it may be applied, disinfectant for at least six months. Every ingredient in this polish is possessed of disinfecting properties, but the turpentine possesses it in the highest degree. I must not fail to acknowledge that Schonbein was the first to observe that oil of turpentine could generate peroxide of hydrogen. I am not aware that he had recognized it in any other substance, with the exception of alcohol, in which I have failed to detect it.

What is known as the guaiacum process is a perfectly reliable test for peroxide of hydrogen. The peroxide alone, although a powerful oxidizer, is incapable of oxidizing and turning blue the resin of guaiacum; but in the presence of either blood or pus it acquires higher oxidizing powers, and does so readily. So on one part of this specimen I will put a few drops of tincture of guaiacum (made by dissolving guaiacum resin in absolute alcohol), and you will find that it will retain its natural colour. I will next apply to another part of the specimen a little watery solution of the colouring matter of blood, and then pour over it some tincture of guaiacum, when you will perceive that the guaiacum resin will be quickly oxidized and turned blue, thus showing the presence of peroxide of hydrogen—in this case supplied by the furniture polish.

Another test for peroxide of hydrogen, but not as reliable, is iodide of potassium, which is a colourless salt, but when it is brought into contact with peroxide of hydrogen, decomposition occurs, and the iodine, which is of a bluish-black colour, is liberated.