

result may not always be the alcohol present, but some other body. In my note-book I find a remark to the effect that it would well repay anyone to examine the essential oils for water, which most of them contain, although they appear to be perfectly limpid; and I throw this out as a hint for some one present to take up the question, for all my own spare time will be employed with the fatty oils, as I am sure the question will well repay careful examination.

RESIN OIL.—This oil is chiefly made by means of distillation in the ordinary manner from the American varieties of resin, and is chiefly used for the manufacture of ordinary carriage grease, and I am sorry to say, on account of its readiness to combine with other oils, is often employed as an adulterant. It is, however, easily detected when used a little freely by heating any mixture with which it may be combined the smell of the resin will be readily perceptible. There are some sorts of resin oil, which, when specially purified, are very suitable for mixing with other oils for machinery with heavy bearings, and which moves with great rapidity, but the strong smell and its tendency to deposit resin when hot must be entirely removed before using it.

TRAIN OIL.—Great quantities of resin oil are used for the adulteration of this oil, the strong smell of the fish hiding that of the resin, and also because the oils strongly resemble each other in respect to their density.

MINERAL OIL.—Perhaps the question of adulteration of animal and vegetable oil with mineral is one of the most important, and one upon which much has been said and written, yet, I am sorry to say, to but little purpose. There is no doubt that for many kinds of machinery the admixture is very beneficial, and is carried on to a very great degree. I think such mixture would prove commercially beneficial to users of steam power in the hands of those who know their business, and who carry on the same in a straightforward and honest manner. But it would never do, as is thought by some, to leave the mixture of these oils to the consumers themselves, for the simple reason that the buying of the mineral oil necessitates the thorough testing of many samples before a good one can be got, and afterwards the oils should be mixed under the guidance of those who have been scientifically taught how to do it. Oil thus mixed is readily detected by its bluish tinge and by its smell. If not thus, it can in most cases be proved by seeing if the oil will saponify. Some people have been led away with the idea that the gravity of the oil will readily tell an admixture of mineral, but such is not the case, as oils are being made of same specific gravity as those with which they are to be mixed; and I know that a large Scotch firm had an order recently for some mixed mineral oil, to be of the same specific gravity as Malaga olive, and this was delivered to the firm giving the order in large quantities.

MINERAL OIL AND OTHER OILS.—There has been much talk