

the sloe are astringent, and contain a considerable quantity of tannin, and on this account they are frequently employed in adulteration. On analysis it is found that while the average amount of nitrogen or *theine* in tea exceeds 5 per cent., that in sloe, hawthorn, and elder leaves but seldom exceeds 3 per cent., and in the first two is always much under this average.

*To ascertain whether tea has been dyed, or mixed with adulterating ingredients:* The presence of *salt of copper* may be detected by putting a pint of tea into a flask, with a small quantity of cold water, agitating it or shaking it for some time, and throwing the whole upon a filter; a portion of the liquid which filters through, being tested with ammonia, will, if adulterated, immediately assume a beautiful sapphire blue colour; another portion of the filtrate, being tested with ferrocyanide, will produce a reddish brown precipitate of ferrocyanide of copper.

The presence of logwood may be detected by moistening a small portion of tea-leaves, and rubbing them gently on a sheet of white paper, which, in that case, will be stained bluish black. If a portion of the tea be thrown into cold water it immediately imparts a pinkish or purplish colour, which becomes red by the addition of a few drops of sulphuric acid. This is an indication of the presence of logwood, for genuine black tea produces only, after a time, a golden brown liquor, which is not reddened by sulphuric acid. The presence of *plumbago* or *black-lead* is detected by the shining or lustrous appearance of the leaves. If a thin slice be removed from the surface of one of the leaves and placed under the microscope, it will be seen to be minutely studded with small black particles. And if a spoonful or two of the tea be infused in boiling water, the liquid will frequently acquire a blackish hue, and, on evaporation, the bottom of the vessel will be found to exhibit the dark shining and characteristic coating of black-lead. The presence of *talc*, *china-clay*, and *soap-stone* is indicated by the silvery lustre of some of the particles when placed under the microscope, especially if the leaves be expanded in hot water, redried and the surfaces attentively examined; some of the particles will be found to reflect light, and appear more or less iridescent.

The presence of *indigo* is also detected by the microscope, under which it appears as minute granules and irregular fragments, many of which reflect a blue or greenish colour, and it is easily distinguished from Prussian blue, the only substance which it nearly resembles.

The presence of *turmeric powder* is likewise ascertained by the microscope. The presence of Prussian blue is discovered by the non-effect of chlorine in bleaching it, as also by the action of liquor potass, and dilute sul-