ART. XVI.—Notice of the Tincture of Acetate of Iron. By Dr. Aldridge, Lecturer on Natural History to the Dublin School of Anatomy, Surgery, and Medicine.

The history of this preparation has hitherto been enveloped in very great obscurity. Every chemist had a different method for its preparation; and very opposite opinions have been entertained with respect to its composition. Dr. Barker states in his observations on the Dublin Pharmacopoeia, that it is the solution of a double salt, an acetate of the protoxide of iron and potash, but without advancing any arguments in favour of this view, while others have as decidedly asserted, that it is a simple solution of peracetate of iron in alcohol, in the great systematic works on chemistry we have no mention of it. Berzelius* describes a proto-acetate, prepared by dissolving proto-sulphuret of iron in acetic acid, consisting of small green crystals, which decompose readily in the air; and a peracetate obtained by dissolving hydrated peroxide in vinegar, forming a red solution, convertible by evaporation into a brownish deliquescent jelly. He asserts that this salt, dissolved in acetic æther, and mixed with alcohol, is used in medicine. We shall see by and by that none of these descriptions correspond with our tincture.

Every person engaged in the practical details of pharmacy is aware of the extreme uncertainty of this preparation, made according to the pharmacopœial directions. I have myself prepared it apparently in an exactly similar manner at different periods; and at one time succeeded in obtaining a very deep coloured tincture: at another completely failed. We find in every laboratory some particular formula, which is considered infallible by its inventor. These directions vary exceedingly; and it might naturally suggest itself that the products should be very different. According to some, you will never fail if yo

dry the sulphate of iron: others say, you must add an excess of acetic acid; while in the opinion of others, all that is wanting is the employment of sufficiently strong alcohol. I remember that during my apprenticeship, I was in the habit of preparing a very dark and permanent tincture, by the following process: mixing one part of proto-sulphate of iron, and two of acetate of potash, with some distilled vinegar, and exposing to the air until it acquired a deep brown colour; then drying and digesting in rectified spirit. The theory upon which I founded this process appeared very plausible: I was aware that the protosalts generally differed from the persalts of iron, by their greenish colour, insolubility in alcohol, and liability to speedy alteration in the air. As the present substance presented a complete contrast to all these characters, I was led to conclude, that it was a solution of peracetate of iron; an exposure to air necessary for peroxidation, consequently appeared requisite; and inasmuch as a neutral acetate should have the oxygen of the acid, bearing to that of the base the proportion of three to one, the addition, under such circumstances, of a certain quantity of acid would be imperative. My faith in the correctness of this view was, however, very much shaken, by an experiment shown to me some time since by my late master and esteemed friend, Dr. Leet, of this city. He introduced sulphate of iron and acetate of potash powdered separately into a bottle; and then pouring on strong alcohol,—immediately corked. The mixture very well agitated was allowed to subside, when a deep Port wine-coloured solution was obtained by decantation. This preparation puzzled me not a little. It was most probably a protosalt, yet of a red colour,—soluble in alcohol, and permanent in the air. All these circumstances tend to throw a very considerable interest about the history of these compounds. My curiosity was excited to penetrate the mystery which enveloped both the preparation and composition of these tinctures. I commenced a series of experiments, to elucidate the causes which produced this uncertainty, and I found that every step in the