

The albumenoids, whether of vegetable or animal origin have been characterised as "infusible, non-volatile amorphous solids, neutral in re-action and indifferent in combination." Thus it seems that their characterising element nitrogen has been able to impress its own individuality upon them, and the most characteristic chemical re-action they can show in one indicating the presence of nitrogen. When they are well dried and heated with soda lime, or even alone, they give off ammonia, which can be recognised by smell and reaction. There is always produced a disagreeable smell on burning nitrogenous substances (wool); not so when nitrogen is absent; (cotton).

The composition of animal and vegetable albumenoids is very nearly the same, and their chemical properties very similar. It is not usual to recognise the properties of white of egg in vegetable products, but it can be shown that a similar substance may be obtained from wheaten flour. On shaking some of it up with cold water, and filtering, a solution is obtained which coagulates on heating, on admixture with dilute acids, alcohol, &c.

The precipitate produced when the cold solution from wheat flour is heated is called plant albumen, but if this be filtered off and a little acid added to the filtrate we obtain a separation of what is called legumin or vegetable casein. This sort of casein is the chief albumenoid formed in the leguminosæ, in peas and beans, in their little laboratories, whenever they undertake, as is their proud privilege, to utilise the nitrogen of the atmosphere.

But the proteids which the cellular tissue of a plant manufactures from its nitrogenous food are not all soluble in water. In fact, however soluble they may be in the plant itself, comparatively little of them in quantity is found to be so after we get them into our hands. If we make a little dough from wheaten flour and knead it enclosed in a piece of calico, either in water, or with occasional immersion, the starch of the flour exudes through the small holes in the cloth, along with the soluble proteids. If this kneading is continued until no more white particles can be kneaded out, and the cloth is then opened there is found inside a grey coloured, elastic, sticky substance, which is known as "crude gluten." Its stickiness is characteristic; the Germans call it "kleber,"