possessing the power of proteolytic action. The pancreatic secretion is now known to have the power of acting on the three chief groups of organic constituents of food: the proteids, the starches, and the fats; brought about by three distinct ferments; one proteolytic, through which proteids are converted into peptones; one amylolitic, like ptyalin, and a third which has the power of converting or decomposing fats into fatty acids and glycerine. To Corvisart, is so far due our knowledge of this proteolytic action of the pancreas. Kuhne however has very recently pointed out by elaborate investigations that not only are the conditions of the ferment different from those of pepsine but the results likewise differ very considerably. Heidenhain has demonstrated that in the pancreas, salivary glands, and stomach, there are structural differences to be observed which correspond with the various states of functional activity of these organs. He has pointed out that the secretory cells of the pancreas do not contain ready formed ferment, at the time of secretion, but a body which yields the ferment and which he terms *Zymogen* ferment generator. To these, the additional discoveries of Kuhne, throw great light not only on the function of the pancreas, but also on the relations of gastric juice; pancreatic juice and bile. He terms the proteolytic ferment of the pancreas *trypsin*, from its breaking up propensity, or disposition. Trypsin cannot digest pepsine, but pepsine will destroy trypsin when in acid solutions. How interesting is the part that the bile plays, first bringing peptic digestion to a close, and then assisting in pancreatic digestion at the very time, when such is required.

Claude Bernard has also pointed out in the intestinal juice, that the ferment which has long been known to exist, in this secretion, is *Inverting ferment*, by which starches, proteids and sugars are modified. I might here advert to the fact that Dr. Herbert Watney is of opinion that fat enters the system, when emulsionized, through the intercellular substance of the epithelium covering the villi. We may well express, we grow fat; but how? The next interesting discovery made in physiology, to which I desire to direct your attention, is that of "Vision Purple." In November last, Professor Du Bois Reymond presented a paper from Dr. Boll, of Rome, to the Berlin Academy, in which a new fact of considerable significance was set forth, viz: "That the external layer of the retina possesses, in all living animals, a purple colour; and that this particular colour is perpetually being destroyed by the light which penetrates the eye." He has also pointed out that the red coloration, seen at the fundus of the eye by the ophthalmoscope, is not the result of the lighting up or illumination of the choroidal vessels, but the true colour of the retina. This latter statement has since been modified. Recently, Professor Kuhne, of Heidelberg, has given the prolific suggestion of Dr. Boll careful consideration, which has resulted in the production of many new and exceedingly interesting facts. He found that the beautiful purple colour persists after death, if the retina is not exposed to light. Under the influence of monochromatic sodium light, the purple colour does not disappear sooner than from 24 to 28 hours. According to Kuhne, as long as the epithelium of the retina is alive, it possesses the power of restoring the faded vision-purple. Thus we have the epithelial layer of the retina performing a particular and important function, which, to use the terms of Kuhne, becomes a purple generating gland. Many years ago, Henreich Muller drew attention to the fact, that the rods of the frog's retina are of a red colour, from the imbibition of red colouring matter of the blood. Leydig and Max Schultz observed a like manifestation in the retina of the owl and rat. These observations are still in their infancy, and before any certain data can be arrived at, will require even closer investigation. Kuhne states, that the cones of the retina possess no purple colour in the frog. In the monkey, the *fovea centralis* is destitute of vision purple. In snakes, the retina possesses only cones and no rods, and is therefore destitute of vision purple. These conclusions lead to the idea that vision purple is not essential to the perception of light. In these investigations it will be a source of congratulation if more accurate information can be obtained, as to the manner in which various physical changes in the retina become the precursors of luminous impressions.

Leaving now the changes of colour, I desire to advert briefly to the recent investigations of Professor Tyndall, at the Royal Institute. It is a well-known fact that vegetable as well as animal infusions, at a certain temperature, become turbid and ultimately lose their sweet smell. This change is induced by swarms of minute organisms,