tremity has an oxydizing power, and the other that of de-oxydising; that is, of removing the oxygen from bodies. Dr. Wollaston observed that gum guiacum acquires a green color in the violet and blue rays, and resumes its original tint in the red.

No attempt had as yet been made to trace natural objects by means of light reflected from them, until Mr. Wedgwood, and Sir H. Davy, took up the subject. They produced profiles and traces of objects on surfaces prepared with nitrate and chloride of silver, but they did not succeed in rendering their pictures permanent.

This difficulty was finally overcome by M. Niepce, who produced a permanent picture of surrounding objects by placing, in the focus of a camera, a metal plate covered with a film of aphaltum dissolved in oil of lavender.

Quite independent of M. Niepce's pursuits, and apparently without being aware, Mr. Fox Talbot, in 1834, had been engaged in similar experiments, and must be looked upon as an independent inventor of Photography, one of the most beautiful arts of modern times. To him is due the first merit of using chemically prepared paper for receiving the impressions, and to him is due the merit of discovering the means of permanently fixing the impression, by this is meant that the paper is rendered insensible to any further action of light.

It very naturally occurs now, to inquire what is the nature of this action of light, and how it is that one portion of the spectrum is more liable to produce action than another. Allusion has been already made to the double action of solar rays, in producing combinations, as shown by Draper in the union of the chlorine and hydrogen; and in decomposing substances, as in the case of linen marked with nitrate silver becoming black. Paper moistened with chloride of gold reddens in the presence of light and ultimately deposits flakes of pure metal. Oxide of silver is resolved into silver and oxygen gas, and manganesic acid into peroxide of manganese and free oxygen. Strong nitric acid is broken up by light into oxygen and hyponitric acid.

Of all the rays of the spectrum the violet has the greatest blackening power; when paper covered by chloride of silver is exposed to the luminous spectrum it becomes reddish brown beyond and in the violet ray, blue or bluish gray in the blue, very slightly yellow or not all colored in the yellow, reddish in the red, and faintly red beyond the red ray. The part of the spectrum from red to green, even when concentrated by a lens, gives a dazzling focus which does not blacken chloride of silver after two hours exposure.

The spectrum exhibits those chemical effects beyond the violet ray, the extreme edge of the violet, however, according to Berard, showing the strongest chemical action: this point of greatest intensity varies with the nature of the material, or the prism through which the light is passed; thus, if the light be passed through a solution of blue vitriol before it reach the chemical paper the greatest blackening occurs at the extremity of the violet ray, while, if passed through oil of aniseed or crown glass, the point of blackening will be in the red ray. Dr. Draper has shown that it is possible to deprive the solar ray of its power of blackening silver salts by passing it through a solution of neutral chromate of potash, bi-chloride of platinum, a few other metallic salts, and even yellow vegetable infusions

From the foregoing it appears that the chemical action of the solar ray is not equally diffused over the whole, but confined to a portion of the spectrum, that the point of greatest light in the spectrum is not the point of greatest chemical action, and that it is possible to shift the point of chemical action to a small extent in the spectrum by passing the light through media of different refracting power, or even wholly to destroy the chemical effect of a white ray by passing it through certain colored solutions.