when placed side by side, could not be distinguished from one another.

The ova were of the same colour when first deposited, and underwent the same changes of appearance, at the same time, in the dark and in the light.

So far, therefore, as the direct agency of light is concerned in the development, growth, nutrition, and coloration of animals, the results of these experiments closely correspond with those already recorded in my Paper.

IV. "On the Effects produced in Human Blood-corpuscles by Sherry Wine, &c." By William Addison, Esq., F.R.S., Fellow of the Royal College of Physicians, London. Received September 10, 1859.

(Abstract.)

The author has found that when a small drop of fresh blood is placed beside a similar drop of sherry wine on a slip of glass, and viewed with the microscope, after being covered as usual with a thin piece of glass, certain changes are seen to take place in the blood as it mingles with the wine, which are thus described:—

"In those parts where the wine is mingling with the blood—at the outer edges of the mass—various altered corpuscles will be seen. They float in the fluid, separated from each other, having now no longer any disposition to adhere together in rolls. Their outlines are altered, and sundry markings appear in their interior. After a short time—perhaps ten minutes, sometimes sooner—numerous corpuscles will be observed throwing out matter from their interior; two, five, or ten molecular spots fringing their circumference. Some of these molecules grow larger and seem coloured; others of them elongate into tails or filaments, which frequently attain to an extraordinary length, and wave about in a very remarkable manner. They all terminate, at the extremity farthest from the corpuscle, in a round globular enlargement. A single corpuscle may very frequently be seen with five or six of these tails.

"During the observation of these phenomena, numerous molecular particles are seen continually passing from the corpuscles; they

float about in, and disturb the transparency of the fluid: moreover, they have an extremely vivid movement.

"At the expiration of half an hour, many of the tails or filaments are seen assuming the form of a necklace of beads; and those also, separating from the corpuscles, float about with a singular independent movement in the fluid."

When blood is similarly mingled with a fluid consisting of two parts of sherry wine and one part of a solution made with a grain and a half of common salt and a grain of bicarbonate of soda to half a fluid ounce of water, the transparency of the fluid part of the blood is not altered, "but the corpuscles are changed in appearance, and the tails or filaments which are now seen issuing from them are generally thicker and much more conspicuous than when the wine alone is used. The molecules which separate from the corpuscles are larger, and the tails which break away from the corpuscles upon any slight motion of the fluid, present various dumb-bell, necklace-like, serpentine, globular, and other shapes."

Under particular but accidentally produced conditions of the mingled fluids, the author has "repeatedly seen the tails suddenly retract, not into the interior of the corpuscle, but into a globular ball at its side. . . . . Sometimes the tail shortens to only half its length, becoming in a corresponding degree thicker." The tail in thus shortening may become bulged in the middle of its length, exhibiting at that part a globular or discoid enlargement. This globule or disc may then burst, and in such case the blood-corpuscle finally exhibits only a small round particle remaining at the point of its circumference from which the tail had proceeded.

After describing in detail various other appearances which he noted in his experiments, and which, as well as those above mentioned, are delineated in several drawings which illustrate the paper, the author thus states his views as to the nature of the phenomena observed:—

"In these experiments, a mixture of a saline solution and sherry wine, or the wine alone, is added to a drop of fresh blood. The addition must change the properties of the fluid in which the corpuscles naturally swim. The change in the fluid produces changes in the corpuscles, shown by their altered appearance, their indisposition any longer to adhere in rolls, and the various markings seen within them.

Some time after these changes the corpuscles discharge molecular particles, and emit tails or filaments, which, separating from the corpuscles, materially alter the transparency and aspect of the fluid.

"The first alteration of the fluid element of the blood—that, namely, produced by the addition of the extraneous fluid—causes no visible troubling or change in it; but the second alteration, which consists in the appearance of a great number of molecular particles, is visibly produced by the agency of the corpuscles. The molecular particles are seen coming out of the corpuscles, separating from them, and disturbing the transparency of the fluid."

In corroboration of his opinion that the filaments and molecules are emitted from the blood-corpuscles, and not produced by a precipitation or solidification of coagulable matter in the plasma, the author especially draws attention to the fact that, so far as he observed, the molecules appear only in those parts of the fluid where the corpuscles have been altered and are fringed with similar molecules, or emitting tails; whilst in other parts, where such changes are not occurring in the corpuscles, the fluid is perfectly clear, and free from molecules. Moreover, the emission of tails and molecules is not the result of a breaking up of the corpuscles; for many of the latter may be seen emitting long tails without any alteration of their natural form; and although no doubt the corpuscles are finally broken up, this process does not take place sooner in those with tails than in those which have none.

In connexion with his present observations, the author relates two cases of febrile and inflammatory disease (already reported by him in the 'London Medical Gazette' some years since), in which molecular matter existed abundantly in the liquid part of the blood. The molecules in these cases, as in his present experiments, he believes to have proceeded from the blood-corpuscles, and likewise through the operation of some abnormal influence, which, however, must have acted upon the corpuscles during their circulation in the living body.

The author next refers to certain inferences from the foregoing observations calculated to elucidate questions in pathology and practical medicine, which, however, he has already made known in his Gulstonian Lectures.

To produce the effects described, brown sherry of the best quality was employed. Inferior sherry wines alter the outline of the corpuscles, but do not cause the production either of tails or molecules. With other sherry wines of a better kind, the author finds it preferable to mix them with a fourth or a fifth part of the saline solution instead of one-third; he has tried port-wines and various mixtures of brandy and water, with and without sugar, but almost always without the effect here described.

V. "Researches on the Phosphorus-Bases."—No. VII. Triphosphonium-Compounds. By A. W. Hofmann, LL.D., F.R.S. &c. Received October 18, 1859.

In several previous communications I have submitted to the Royal Society the results which I have obtained in examining the deportment of triethylphosphine with dibromide of ethylene, as the prototype of diatomic bromides. I have shown that the final product of this reaction is a diatomic salt corresponding to two molecules of chloride of ammonium.

The further prosecution of the study of triethylphosphine in this direction has led me to investigate the derivatives generated by the phosphorus-base, when submitted to the action of triatomic chlorides, bromides, and iodides.

The most accessible terms of this group being chloroform, bromoform, and iodoform, the changes of triethylphosphine under the influence of these agents have more especially claimed my attention.

Action of Iodoform on Triethylphosphine.

Both substances unite with energy at the common temperature. In order to avoid the inflammation of the phosphorus-base, small quantities of the materials should be mixed at a time. The products of the reaction vary with the relative proportions of the two substances.

By adding gradually crystals of iodoform to a moderate bulk of triethylphosphine until a new addition produces no longer an elevation of temperature, a viscous mass of a clear yellow colour is obtained, which, when treated with alcohol, changes to a white powder of cry-