The test was employed thus: The examiner held the disc upright 2 ft. in front of the examinee, who was given a full-length lead pencil. Holding this in his working hand, usually his right, he was told to touch all pins of a particular colour, e.g., red, with the blunt end of the pencil, keeping his head still. This was repeated with each of the five colours, the number of hits for each colour was noted, and the numbers were finally added together.

From testing a number of one-eyed persons who were able to carry on their avocations successfully, it was found that twenty-five hits out of a possible thirty were usually obtained; this was taken as a standard. If the examinee obtained this number it was assumed that his depth-perception was normal. To score a hit the head of the pin must be hit fairly; a glancing blow does not count.

As far as the examinee is concerned, the test is a colour test; to the examiner it is a depth-perception test. If by chance the examinee is colour-blind, this does not matter; his hits and misses are counted as usual. Of course no hint of the real object is given to the examinee, otherwise the malingerer would score misses all the time and the neurasthenic would reveal his neurasthenia rather than his depth-perception.

The real difficulty of those who have recently lost an eye is in the antero-posterior dimension; in the lateral and vertical dimensions the sensations from the external ocular muscles plus movements of objects over the field are sufficient guides. It is for this reason that the examinee's head is not moved and that he moves the pencil directly towards the pin-head and not slantwise. He must not hold the disc.

The apparatus is simple and cheap to construct. It could be varied by a greater variety in the length of the pins and in the kind of weapon used to hit the pin-heads. But, if any variation is made, it is important to obtain the average proficiency by testing one-eyed people who are known to be carrying on craft occupations successfully.

Acute Lupus Erythematosus, with Fundus Lesions.—H. C. SEMON, M.D. and EUGENE WOLFF, F.R.C.S.

I.—Dr. H. SEMON.

Notes on the Skin Condition.

The patient, E. L., a woman aged 26, was first seen by me in consultation, on May 11, 1933. For six weeks she had had rheumatic pains in the shoulders and limbs, treated by the family doctor with salicylates which had alleviated the pains and checked the mild pyrexia accompaning them. A fortnight before I saw her she had left her bed and sat in the garden in the sunlight, which was exceptionally bright for the time of the year. She exposed her face, neck and chest for about four hours. On the following and subsequent days there was pronounced redness, with burning and irritation on the parts exposed. This was regarded as a rather severe type of sunburn, and that it did not subside was the reason of the consultation. A pronounced raised dusky erythema on the parts above described, and sharply demarcated on the chest by the V-outline of the blouse, made it quite evident that exposure to sunlight had been at least a factor in production, although it did not explain its persistence. A guarded prognosis, with the added suggestion that the case might be an incipient acute lupus erythematosus, was justified by her admission to hospital with well-marked symptoms of that grave disease, a fortnight later (May 25). Throughout the subsequent course there appeared almost daily, fresh patches of infiltrated dusky erythema, on the backs of the hands, the trunk, and the lower extremities, on which in particular a purpuric tendency, and even necrosis, rapidly developed. Mental irritability varied with a state of somnolence, there was pronounced gingivitis with bleeding of the gums, a rapid pulse, and a septic type of temperature (100-104° F.). A blood-culture and one from the catheter specimen of the urine were negative.

A blood-count on June 13, evidenced some degree of leukopenia—4,000—which had fallen to 3,000 a month later. There was no albuminuria at first, but this developed on July 2, and increased the gravity of the outlook. In view of this, I obtained permission for a consultation with Dr. A. C. Roxburgh who had recently published the notes of five very similar cases in the *British Journal of Dermatology and Syphilis*. He was in full accord with the diagnosis and feared an ultimately fatal issue. About this time the patient complained of misty vision, which on inquiry was found to have been present before her admission on May 25. The cause of this symptom, which was quite new to me, was revealed by Mr. Wolff on retinoscopy, and is the basis of a communication which we believe to be original.

No treatment proved of the slightest avail in stemming the progress of the disease. Small injections of a gold preparation, nucleonate of soda, and eventually (when the symptoms suggested a general septicæmia) anti-scarlatinal serum, had no beneficial effect whatever, and with the signs of a bronchopneumonia, the patient died in coma on July 18. A post-mortem examination was refused and was not urged because the findings in this disease are nearly always the same, and resemble those met with in death from acute septicæmia.

The ætiology of acute lupus erythematosus is still unknown although there are some authors who believe that tuberculosis may play a part, while a streptococcal causation also has its advocates. The acute variety with its generalization of infiltrated œdematous, bullous or hæmorrhagic patches does not much resemble the "butterfly" patches of the chronic type, and yet the chronic sometimes passes spontaneously into the acute or may become so by injudicious therapy, of which ultra-violet light, some acute infection, or the application of caustics may be cited. The influence of light in the causation in this case seems to me rather more than a coincidence. There was no skin trouble at all previous to the well-defined and prolonged exposure to direct sunlight, which would appear to have "sensitized" her skin to some toxin or bacterium, which may well have been of streptococcal type. Several such cases have been previously reported and the associated gingivitis has also been noted on more than one occasion, but is by no means invariable and cannot therefore play a leading role in the causation. There does not in fact appear to be a single constant symptomatic feature or concomitant in this peculiar disease—except the skin manifestations—which would give us a lead in ascertaining the ætiology or instituting a rational line of therapy.

II.—Mr. Eugene Wolff.

The Ophthalmoscopic Appearances, with a Pathological Report.

I first saw the patient on June 12, 1933—that is, five weeks after the onset of the skin affection. She had complained of some slight mistiness of vision.

In the right fundus there was a round, slightly raised area, whitish in colour, rather less than a quarter the size of the disc, situated on its nasal side, and about a disc breadth from it. A retinal vein passed over the lesion and by its bending emphasized that the patch was raised above the general level of the retina.

The lesion differed from a miliary tubercle of the choroid, which it somewhat resembled, by lacking the yellowish colour and the usual oval form of the latter, also I thought it was more raised.

At this period there was no albumin in the urine. A terminal albuminuria appeared only some weeks later (on July 2).

The lesion was seen at intervals till the patient died. It enlarged slightly at first, but otherwise showed little change.

Similar lesions appeared in the left fundus and two smaller areas formed in the right eye above the disc (fig. 1) during the last week of life.

The edges of the disc became slightly blurred, but there was no actual swelling. Also, I thought, the veins became more engorged.

Vitreous opacities were looked for but not seen. It is, however, quite possible that fine opacities were missed, as examination of the fundus—owing to the condition of the eyelids, &c.—became rather difficult.

The patient died at 10.25 p.m. on July 18, and as no general post-mortem was allowed, the posterior portion of the right eye was removed from the front next morning.

As I can find no mention of the method, it may perhaps be of use to describe it shortly. A speculum was put in and the conjunctiva divided along the whole of the lower fornix (on another occasion I should incise the upper fornix) and dissected off the globe. All the muscles were divided except the external rectus. The optic nerve was severed and the eye drawn forward by traction on this. The posterior portion of the eye could then be quite easily removed. The anterior portion was

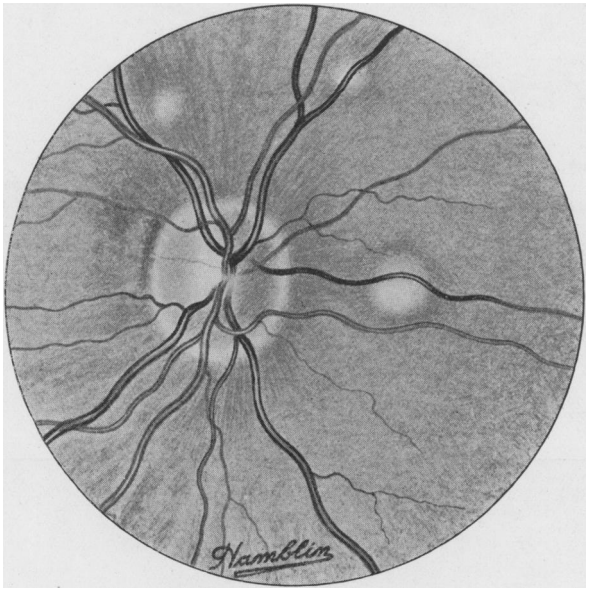


FIG. 1.—Acute lupus erythematosus with fundus lesions.

replaced and a few stitches were put in the conjunctiva. With this method it requires close inspection to see that anything has been done.

The posterior portion of the eye was fixed in 10 per cent. formalin and embedded in celloidin.

After a number of sections had been cut, it was removed from the celloidin, embedded in paraffin, and stained for tubercle bacilli and other organisms, but none were found.

The section showed a fairly generalized slight invasion of the choroid with inflammatory cells.

At the site of a lesion (fig. 2) there was a well-marked subretinal exudate containing inflammatory cells (lymphocytes, a few polymorphonuclear leucocytes a few large mononuclears), some pigment, some spindle cells and capillary vessels (fig. 3). The last, no doubt, indicated the conversion of the exudate into granulation tissue. Two small breaks in the pigment epithelium were found deep to the exudate.

There was no evidence of tuberculosis.

Apart from the post-mortem changes, one could not be sure of any pathological changes in the retina.

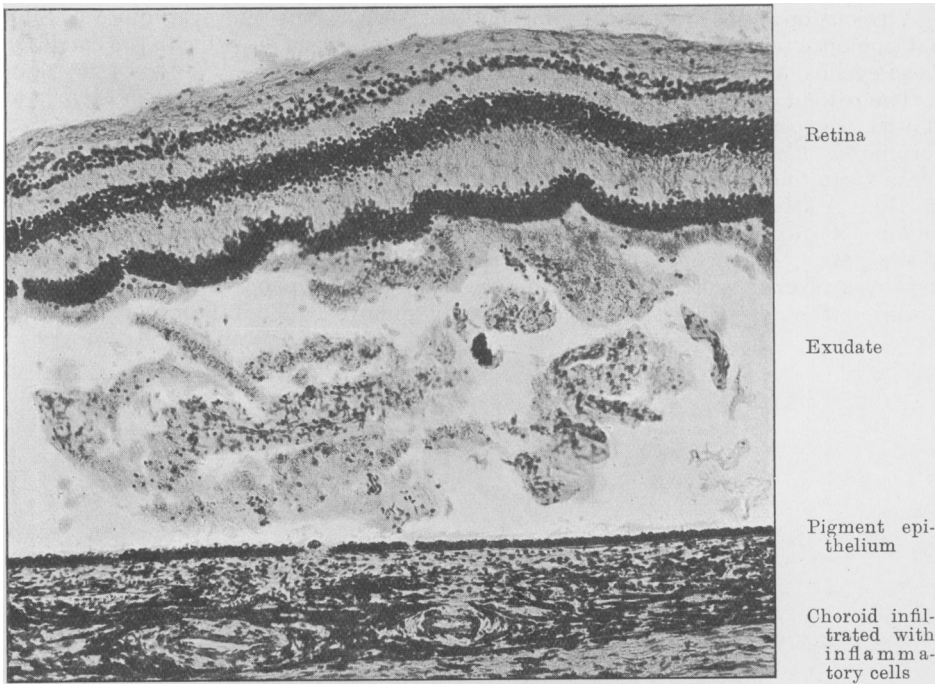


FIG. 2.—Section of the retina and choroid and the exudate between them.

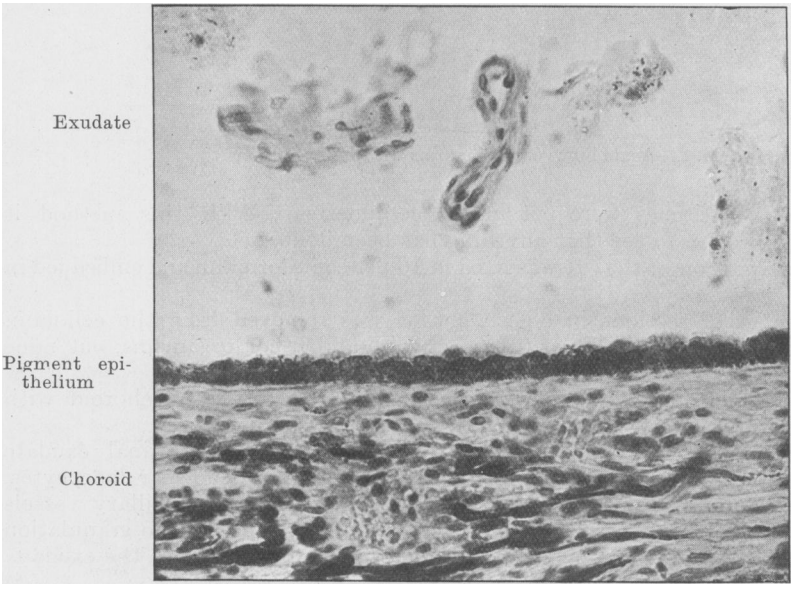


FIG. 3.—To show a new-formed capillary (under higher magnification) in the exudate between choroid and retina.

The fundus condition then appears to be the result of a choroiditis with localized subretinal exudates.

So far as we are aware no fundus lesion has previously been recorded in the acute "septicæmic" form of lupus erythematosus.

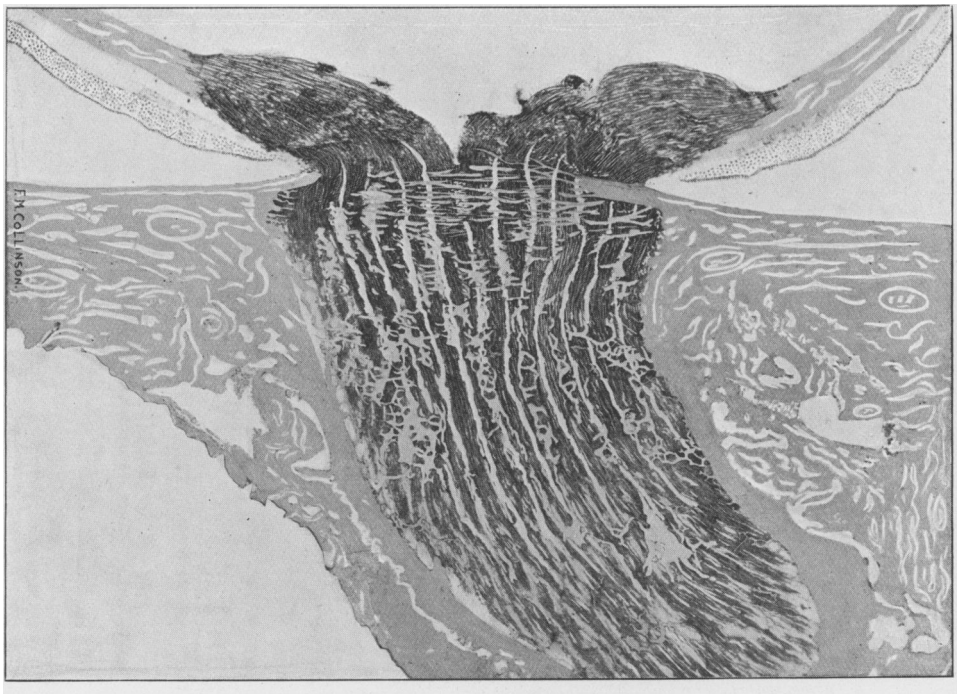
Abromowitz and Dulewicz, however, describe fundus lesions in a less fulminating form of the disease.[1] These consisted of small spots whose colour was lighter than the rest of the fundus, situated principally at the macula, but also around the disc. They gave the appearance of being shallow cavities. The authors state that the lesions reminded them of the "retinitis guttata" described by Dimmer in arteriosclerosis and in other conditions whose ætiology was not clear. Their patient also when first seen was pregnant, and the number of spots varied with the general condition, especially with the amount of œdema. There is no note as to whether albuminuria was present or not.

In our own case the fundus lesions no doubt formed part of the "septicæmic" condition, and one would suggest that, like miliary choroidal tubercles, they probably represent a terminal stage of the disease.

A Note on the Normal Medullation of the Optic Papilla in the Dog

By Eugene Wolff, F.R.C.S.

In a paper entitled "A Contribution to the Pathology of Papillœdema,"[2] Dr Francis Davies and I discussed the normal anatomy of the optic "papilla" in the dog, and showed that it differed in so many ways from that of the human that unless these facts were realized it was very easy to misinterpret the results of experiments.



R = Retina. S = Sclera.

Normal optic nervehead in the dog, stained with Weigert-Pal. Note that the fibres of the disc and in the region of the lamina cribrosa are medullated.

1 *Ann. oculistique*, 1933. 2 *Brit. Journ. Ophth.*, 1931.