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PSYCHOSOMATIC PHENOMENA IN OPHTHALMOLOGY*

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I WISH to express my thanks to the Royal College of Surgeons for the honour they have done me in asking me to deliver this lecture.

Medicine owes a considerable debt of gratitude to the pathologists who, during the last hundred years, have so materially contributed to our understanding of the various diseases, but sometimes one wonders whether we did not pay a price for this. Several generations of physicians have been trained to look for structural changes every time a patient comes with abnormal symptoms. If no physical signs can be found, then the complaint is considered illegitimate, neurotic or psychogenetic, and the patient is taken none too seriously; but, since the complaint

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is real to the patient, and his symptoms distressing, he will often drift towards those who are more apt to listen to him. In some fortunate cases he consults a competent psychiatrist, but more often the several varieties of charlatans attract him.

When I began my medical studies shortly before the first World War, such an attitude was usual, at least in Paris. On the one hand were the organic diseases due to structural changes, and this constituted the realm of real medicine. In another group were the purely functional symptoms due to a perturbation in the physiology of some organs, and without being actually denied, such symptoms were considered with suspicion and treated lightly. In a third group were the mental diseases, the psychoses, a category quite apart, belonging to the psychiatrists.

Such a rigid classification was, of course, untenable, and many of the better physicians realized this. A change in outlook was bound to occur. It was at first easily accepted that organic diseases could produce functional or even mental symptoms. For instance, an organic disease such as a goitre could alter the normal functioning of the thyroid, with resulting tachycardia and other disturbances. One more step, and this functional disturbance would bring about emotional and personality changes, verging sometimes on the psychotic, in the patient with thyrotoxicosis. Organic diseases of the stomach would alter the normal production of gastric juices; cellular diseases in the kidneys or sclerosis of the blood vessels were the cause of hyperpiesis; and it was accepted that the structural changes in a brain tumour or in general paresis could result in severe mental disorders. There are many other such examples.

We must note that all these reactions from one category to the other go in the same direction—from the organic to the functional and possibly the mental, downstream from the legitimate to the lesser. For a long time established medicine would go no further, but in due course the prejudices broke down, and it had to be admitted that some disturbances travelled upstream. Thus it was realized that a lasting functional disturbance could result in a true organic one. For a long time the physiological imbalance was pure, uncomplicated and therefore reversible. If, however, it persisted long enough, structural changes would appear. The pathogeny of high blood-pressure and of gastric ulcer came to be interpreted in that light, and this "upstream" relationship between the functional and the organic is now generally accepted.

The next step was a more difficult one to take, and it is precisely the one which led to the psychosomatic approach to medicine, which became possible when the psychogenetic origin of organic lesions was accepted. At first emotional or psycho-

logical disturbances were considered capable of leading only to functional imbalance. Of this there are many examples in general medicine as in our own field of ophthalmology. Consider the numerous papers on ocular psychoneuroses causing photophobia, blepharospasm, convergence spasm, etc. The psychiatrists pointed out that, when patients were moved by various emotions, such as fear, anger, hate, sexual urge, these would normally influence the blood pressure, the endocrine secretions, the muscular tone, etc., but that, if the normal outlet was not offered, if all this could not culminate in the usual corresponding action and was repressed, then secondary and compensating reactions would appear, affecting the ductless glands, the vasomotor control system and several others, so as to produce corresponding functional disturbances. The last and most difficult step in this upstream sequence was to admit that purely psychological, emotional and mental disturbances could be the cause of organic diseases, but by now people were ready to accept that, if it lasted, the functional stage could lead to structural, irreversible and permanent damage. The pendulum had now swung all the way back, and so we come to psychosomatic medicine.

The study and practice of ophthalmology is unfortunately a bad training-ground for the understanding of such phenomena. More than others, we are accustomed to look for structural changes, since the transparency of the eye and the magnifying power of our optical instruments allow us usually to see them in the living patient who comes to us with his complaint, instead of having to wait for the *post mortem*, as the internist so often must. This is very unfortunate, since ophthalmologists should be highly interested in the psychosomatic approach to diseases, for two special reasons. In the first place, psychosomatic symptoms are very often mediated through the vegetative nervous system, and we know how important is its rôle in the eye. Secondly, the psychiatrists, and especially the psychoanalysts, teach us that the eye has a high symbolic value and will often be the site of conversion symptoms.

This leads me to discuss, at least in an elementary fashion, the pathogeny of psychosomatic symptoms and diseases. Every physician knows that a sudden emotion can cause functional symptoms, such as a sharp rise in the systemic blood-pressure. We ophthalmologists have often seen one of the most perfect examples of psychosomatic disease: a woman receives a wire bringing bad news, or is afflicted by the death of someone dear to her, and an acute attack of glaucoma sets in: the intra-ocular pressure shoots right up to 100 mm. Hg or more. This is the

functional stage, and if it does not last too long, it is reversible: with large doses of phenobarbital, repeated pilocarpine and eserine, a retrobulbar injection of novocaine and alcohol, all may return to normal. If, however, the high pressure lasts, the functional disturbances become irreversible and, should surgery be delayed, structural changes familiar to all of us will ensue. In a similar fashion, under the influence of various emotional disturbances, such as fear, anxiety, worry or a sentimental crisis, we may have patients come to us with other symptoms (*e.g.*, vascular spasms, ciliary spasms, etc.), and we feel that these functional disturbances are caused by an imbalance of the vegetative nervous system, *i.e.*, vegetative neurosis (Harrington).

Nevertheless, it is not enough to consider only the disturbing news, the emotional upset which was at the origin of the trouble, because only a few people will respond in that way to causes which, in most others, will evoke more sober manifestations. We must ask ourselves, then, where the difference lies. There is no doubt that a certain lability of the vegetative nervous system may be the explanation, and endocrine disturbances are often to blame, but let us not overlook the psychological background of such patients, and their personality pattern. To put it plainly, not everybody is apt to have an acute glaucoma or a spasm of the retinal blood-vessels. We can recognise what type of patient has acute glaucoma, for instance, and we are familiar with their emotional tenseness, their anxiety bordering on panic.

I have started with a striking example, but we should not ignore other and less dramatic forms of psychosomatic phenomena. Sometimes the emotion is not a sudden one, but consists in an almost permanent emotional tension. "Stress and strain" as a cause of hyperpiesis is generally accepted, but we must know that there is the equivalent in ophthalmology. It is difficult to over-emphasize the importance of this chronic psychological tension in chronic glaucoma, for instance, or in some vascular diseases of the retina, such as central angiospastic retinopathy. Here again one should not overlook the psychological and personality background which is the deep underlying cause, explaining why some people, but not everyone, will break down under the strain. The emotion is not the whole story. How the patient can take it constitutes another vital factor.

I shall now come to phenomena which are less familiar to most ophthalmologists. For these you may not so easily accept, at first, the explanation given by the psychosomatic approach. I am referring to conversion symptoms. It is difficult to deal with this without using to some extent the vocabulary of the psychoanalysts, but a few examples will make their meaning clearer.

In some patients there is a deep unsolved emotional conflict which permanently causes imbalance and psychological tension. The conflict may be a family problem or domestic situation familiar to the patient. We shall probably elicit such things from him if we question with patience and sympathy, but obstacles arise in some cases. Often—more often, the psycho-analysts will say—the emotional trauma dates back to childhood and has been repressed, barred from the clear consciousness of the patient. It will rankle in the subconscious, and tint the whole personality. Now and then it will come to the surface under the form of a pathological symptom which is an outlet for the hidden, unknown emotional tension. It will emerge in unexpected fashion, so that we will often overlook the underlying cause.

It is not often that the ophthalmologist can dig up this ancient cause, and more often psycho-analysts will publish such case-histories. Here is one which I owe to Dr. Leuba, a distinguished Paris psychiatrist:—

A girl aged 12 years, very grown-up for her age, and looking 16 years, was brought to him for instability, difficulty of adjustment to her school environment, and an obstinate laziness in spite of a brilliant mind. She would wet her bed at night every time she had been thwarted the day before, and at times there was a marked convergent squint. In many ways she showed her dislike of the female sex, and her refusal to belong to it. As she closed up under questioning, Dr. Leuba resorted to having her draw freely. She made a likeness of him, then pierced both eyes with a pin, and at the same time her squint increased considerably. At another sitting she actually hit Dr. Leuba with the end of a wire, causing a painful superficial corneal abrasion. The next time the child came, somewhat subdued, she drew a body with two heads, a symbol of sexual intercourse according to Dr. Leuba, who tried to find out where and when the child could have seen this. The nurse, when questioned, explained that she herself had been seen by the child while having intercourse with the chauffeur. The child was about two years old at the time, and she had been standing up in her bed looking intently at the couple. Dr. Leuba was then able to help her to overcome the consequences of this repressed psychic trauma, and all her symptoms disappeared—the squint, the bed-wetting and the instability.

Weiss and English have pointed out that, since it is through the eye that we have very often, in childhood, seen things we were not expected to see, our repressed feeling of guilt will usually affect it more than any other organ: "*Persons so disposed* who have seen something which they consider improper, may react with squinting, blepharospasm, watering of the eye or hysterical blindness."^{*}

A feeling of guilt will sometimes provoke ocular symptoms. My friend Dr. Reboul, of Toulon, told me about a patient of his suffering from mild chronic blepharitis. His condition became suddenly worse every time he had extra-marital intercourse,

* One should note the importance of the words "*Persons so disposed*." The same event will have very different consequences according to the individual personality pattern and psychological background.

whereas marital intercourse had no such untoward consequence. A patient of mine, with chronic glaucoma, had already almost lost the vision of one eye. A highly-strung, busy and intelligent man in his middle forties, he comes in regularly for a tension check, and in the meantime he is on a constant look-out for coloured rings as a warning of hypertension. In particular he looks at the flame of his lighter every time he takes a new cigarette. Usually faithful to his wife, he has in the past year had a few slips, and on each occasion he noticed coloured rings, but never when his wife was the partner of his intercourse. With regard to this feeling of guilt as a cause of distressing symptoms, one must note that patients will naturally consider their ailments as a merited punishment. My friend Dr. Reboul told me the amusing story of a patient with toxic amblyopia. When he asked the victim whether he drank and smoked, the answer came: "No, but I must admit I gamble." Disease as a just retribution is a fairly widespread conception. In my experience the unnecessary use of dark glasses often signifies an unconscious feeling of guilt. The patient seems to hide behind them.

Family conflicts will often affect children, and we are all familiar with the frequency of parental strife in the homes of squinting children. Inman, Pugh and many others have stressed this. Some time ago a boy of 16 was brought to my office. Since the age of 10 years he had exhibited a constant blinking tic. There was no local cause, and, as usual in such cases, the child was nervous and highly strung. A careful history showed that this tic, together with enuresis, had appeared at the time of his parents' divorce. The enuresis lasted only a few months, but the tic persisted.

It is not often that we ophthalmologists see our patients often enough and get to know them sufficiently to discover what the psychiatrists call an "Oedipus complex," but I know of several cases where the cause of the ocular symptoms can be traced to a probable feeling of jealousy at the time of a child's marriage. Here are two such instances:—

I had seen at regular intervals a woman in her late forties with hyperopia and presbyopia. One year, at a few months' interval, I twice had to diminish the strength of her spheres. There were no lenticular changes, but her blood-sugar was high. This condition responded to a proper diet, and the refraction returned to its previous level. During the next two years such attacks of hyperglycaemia occurred several times without any change in her diet. I happened to know the family fairly well, and found out that the initial attack had occurred when she first learned that her eldest son considered becoming engaged. This she violently opposed, and for two years her son hesitated, sometimes giving up his plans, sometimes returning to the girl. The attacks of hyperglycaemia always coincided with the latter. Finally the son married, the mother became reconciled, and the blood-sugar returned to normal and remained so. There were no more of these transient changes in her refraction.

A man in his late forties enjoyed perfect health until a much loved daughter got engaged. Thereafter he suffered constantly from severe heartburn, and he developed a moderate bilateral ocular hypertension (35 to 40 mm. Hg.). This responded inadequately to miotics, and an operation was considered, but, soon after his daughter married, his symptoms disappeared, and the tension has remained normal during the next two years.

An inferiority complex, or—to be more exact—a feeling of being inferior to one's task, I have sometimes met as a cause for ocular symptoms.

Here is a short case-history of a girl aged 27 years who came to me for the surgical cure of a convergent squint of 10 to 15 degrees. This esotropia had appeared two-and-a-half years previously, and since that time the patient had suffered from constant diplopia which prevented her from reading. Her hyperopic refraction was well corrected. The esotropia would vary, and I regarded the trouble as a spasm of convergence. The girl was nervous, scrupulous and not very bright. She had worked for several years during the war in a quiet government office. In 1945 (she was then 24), the war being over, her department became very active, as it was concerned with rebuilding some of the 4,000 bridges which had been destroyed in France. The patient worked slowly, and was unable to keep up with the rest of the office. She would work late in the evening, but definitely felt that she was inferior to her task, and would never be able to cope with it. Then her diplopia first appeared. Initially it was only occasional, but it became permanent after the head of her office took a dislike to her and scolded her almost daily for her poor work. She gave up her appointment, but the squint and the diplopia persisted. She was refracted repeatedly during the next two years, and glasses were changed as often, but that did not avail. After 4 months of orthoptic treatment with the major amblyoscope, she was cured of her convergence spasm and made comfortable. I advised her not to return to her former office, but to choose an employment with fewer responsibilities and a more sympathetic environment. She was to report if any trouble occurred. I have only heard from her by letter, but for the last two years she has been getting on comfortably.

One often notes the cumulative action of several causes, some organic, some psychic.

A young man of 24 was referred to me, with a myopia of 3 dioptres, and a 20/20 vision in both eyes, for a convergent squint. This had first appeared at the age of 4 during an attack of infantile paralysis. Glasses were prescribed, and by the age of 7 the esotropia had completely disappeared. I have no data on his fusion at the time, but it must have become normal, since he was greatly distressed by diplopia when he started squinting again at the age of 20 years. He had, in reality, a marked but variable convergence spasm which at times was as high as 25 degrees. There was presumably, at first, an organic cause for this muscular trouble. Probably the cure was not complete, and the stereopsis poor, so that there remained a weak spot ready for future trouble. The history revealed that what started this new squint was a deep emotional upset when his brother-in-law died. He was fond of him and genuinely grieved, but also his own life was considerably changed. He had always loved music and was devoting himself to it. When his brother-in-law died, the patient's father made him leave his musical studies and come with him to the family factory. This was a great disappointment to the boy. Also he was brought back into direct contact and under the tyrannical authority of his domineering father. I do not know which was the worse for him. Later I got to know the family a little better, and it was a strange one. The father was loud-spoken and domineering. I found myself in conflict with him several times, and I understand that this was his usual attitude in the family. The mother was a gentle, meek, evidently downtrodden little woman. She never dared say a word when her husband was present, but would show she had an excellent mind as soon as he was away. The boy of 24, our patient, reflected his mother's attitude, being also in terror of this tyrant who headed the family.

I could report several such instances in which organic and psychic causes intermingled, or rather added up, and every one of you knows of similar cases. It is usually a mistake to ask: "Is the cause organic or is it functional?" Rather should we wonder: "How much of the one, how much of the other?" This leads me to make a distinction between ocular disturbances entirely due to a psychosomatic factor and those in which the latter only starts the trouble or makes it worse: the organic reason is at the bottom, the psychic one causes the onset or the setback. Psychiatrists will tend only to see the former type, but we ophthalmologists will deal more often with the latter.

It is essential to bear in mind the possibility of such a complex aetiology. Overlooking this may lead to serious mistakes. If, for instance, there is a history of emotional upset or some other psychological disturbance, we must not jump to conclusions and be satisfied with dismissing the case as psychosomatic. We must carefully ascertain the physical condition, for quite often some organic trouble will also be present. Conversely, if we find an organic condition, we must always ask ourselves if this is serious enough to explain all the symptoms. If not, we must try to find out whether some psychosomatic reaction does not also come into the picture. Such often obtains in minor refractive errors. A perfectly normal eye is rare. If we come across a 0.25 or a 0.50 error let us not consider this a satisfactory explanation for all kinds of functional disturbances. Especially if the patient is young, we must not be satisfied with merely prescribing these weak glasses, but rather must we try to find out whether something else, far more important, is the root of the trouble. We will sometimes discover surprising psychological disturbances in a few minutes' conversation.

In such cases where organic and psychic causes interact, there is another pitfall. We must be careful not to stress the slight organic abnormality too much, or we may get the patient worried about this. He may concentrate on it and get even worse. If, for instance, there is some minor refractive error, it may be better to ignore it, or else we must put it in its proper light and explain that, in normal times, such a slight error would be easily overcome by his muscles, that his temporary upset condition is the reason for giving him glasses, that these will help him, but that as soon as he is better he will be able to discard them, because there is nothing organically wrong.

I have throughout assumed that the psychic trouble could cause the organic one, and that the symptoms were an outlet for an emotional tension, but this is a moot point, and there may be a different interpretation. In some cases there may be an initial

organic disturbance which will cause psychic and somatic symptoms alike. The former are, however, apt to be more obvious, and may afford valuable information (Marty). In that light must we think of the hypothalamic area. It is well known how essential is this part of the brain to our emotional life (Cannon). Here will originate nervous stimuli highly important in the visual function, vaso-motor control, regulation of the intra-ocular pressure, control of pigment distribution, etc. At the same time, directly or indirectly, emotional stress can affect the adrenals, pituitary, gonads and thyroid, and all of these may in turn react on the eye, its tension, circulation or motility. By following this train of thought, Magitot was led to consider, not that emotional factors could cause glaucoma, but that there is originally a diencephalic disturbance which causes both the ocular hypertension and the highly emotional personality of the patient.

I have mentioned some of the psychic disturbances which may cause ocular symptoms, but I have overlooked many more. I have only dealt with what we ophthalmologists can observe or learn in the course of a short conversation with our patients, but it is only the psychiatrists who have the time and the training necessary to expose the underlying causes. It must be well understood an emotional factor initiating functional or somatic troubles is not the whole story. Most people will "take" the psychic trauma, and only a few will develop symptoms. An abnormal personality is necessary for this.

Here is a case-history which will show the psychological disturbance acting at two different levels: in the near past it starts the trouble, in the distant past it had created the abnormal personality which made effective the recent emotional upset. A movie actress in her middle thirties complained of bad vision in the distance, dizziness, headaches, general poor health and fatigue during the last few months. She had had the same glasses for over ten years (-0.25 sph., -0.75 cyl. 90) and believed that they were responsible for her trouble. I found the spheres too weak, and changed the 0.25 to a 0.50, making no alteration in the cylinders. The muscle-balance was normal. The patient came back a few weeks later, stating that she could see quite comfortably at the movies and theatre now, but that she was still unhappy driving her car: things seemed to move on either side of her when she looked straight ahead, and the road seemed either to rise in front of her or swerve to the side. The headache and dizziness persisted. A second check-up satisfied me that my first prescription was correct. The change of glasses being so slight, I was surprised that it had not been easily accepted by this relatively young woman. I therefore questioned her to find whether something had been upsetting her lately. She had been playing for the movies steadily for over 15 years, but during the last half-year she had been given no parts. She felt that she would never be given one again, that she was probably considered too old now, and less attractive, and she was worried about her financial future. It was only since she had started worrying that she had found her glasses unsatisfactory and that her other symptoms had developed. In fact there were more of these than she had previously mentioned: a constant pain in her stomach, an occasional diarrhoea, and now and then what seemed to be extrasystoles.

I felt that all this was disproportionate with her worry, especially since the latter was probably unjustified, so I tried to find out something of her psychological background, and learned a few interesting facts. When she played, either for

the movies or the legitimate stage, she would now and then "see" a word ahead of her, usually several lines away which she felt certain she would not be able to pronounce. When she came to it, all the muscles in her face and neck would tighten, and she was only able to get the word out moderately well by a tremendous effort of will-power. The words she felt she would not be able to pronounce were not always the same, nor did they begin with the same sound. A psychiatrist would certainly be interested in having a list of these words, for it might disclose the deep reason for this inhibition. She had always suffered from this, ever since her early childhood when she had to say her lessons in school.

It was becoming apparent that she was psychically far less normal than she appeared on the surface, that her neurotic background might account for her being severely upset by a minor and momentary worry, and that the cause of all this should be sought in her early years. So I questioned her further, and found that her parents divorced when she was three, that her mother re-married at once and left with her for a distant country, and that she never saw her father again. He had died since. Her stepfather she hated, for he had been unkind to her and had made her childhood miserable.

I made no further changes in the glasses, and I advised the patient to consult a psychiatrist.

We can see in this case that the psychological upset which starts the trouble is not everything. For it to be operative, as a rule the personality has to be affected by a deeper and more lasting imbalance.

I have given a few examples of the several psychological causes which may produce visual symptoms. Another approach to the psychosomatic problems of ophthalmology is to consider what are the various ocular diseases or symptoms which may either be started or made worse by factors emerging from the psychical sphere. I shall now take this up rapidly and incompletely, since much has yet to be done in that field. In many cases we can only suspect the part played by psychological factors.

Glaucoma, whether acute or chronic, is often precipitated or caused by emotional upsets. Schoenberg, Culpin, Magitot, Harrington, Gros and many others have stressed this, and Hibbeler recently published an interesting study of the personality patterns of glaucomatous patients which she found to be definitely abnormal. In a less scientific way we are all familiar with the psychology of such patients: either highly strung, tense and psychically overtaxed, or over-sensitive and incapable of adjusting to an unpleasant environment, to domestic problems, to professional worries, and to more or less well-founded fears. One of my patients who suffered from glaucoma and various digestive ailments summed this up very well: "I am not a sick woman, I am an unhappy woman." War conditions have severely taxed some of these sensitive natures. Gros, who practices in Boulogne, a Channel port which was bombed over 500 times during the last war, published an interesting paper on this. The ocular hypertension in his patients was brought on by various emotional

shocks: broken engagement, husband taken prisoner, bombing, etc. Far more strange still are Inman's findings that an attack of glaucoma "may coincide with the anniversary of events once pregnant with emotion, but now apparently indifferent or even long since forgotten."

Vascular disturbances are sometimes caused by psychological factors mediated through the vegetative nervous system: spasms of the retinal arteries, possibly spasms of those bringing blood to the optic nerve, spasms of the cerebral arteries and hemianopia, with or without migraine, should be mentioned in this connection. Harrington published the interesting story of a U.S. Navy officer whose migraines were due to a feeling of being inferior to his new duty when he was put in command of a cruiser. He was only cured when he went back to a subordinate position. A vascular spasm was probably responsible when the Homeric warrior became suddenly blind at the sight of his threatening enemy. As Culpin pointed out, this is probably the first published observation of a psychosomatic disturbance.

When the spasm is prolonged it may lead to central angiospastic retinopathy. Zeligs observed several such cases in the U.S. Marines, and found that a state of acute anxiety due to the military situation was a common factor. Retinal haemorrhages or exudates will sometimes be observed to follow a rise in the systemic blood-pressure or an increase in the blood-sugar level. Both can, of course, be due to emotional factors.

The psychological study of squinting children is highly interesting, and much is still to be done in that field, but everyone agrees that psychological disturbances play an important rôle. Inman has stressed this, and Pugh considers that 20 per cent. of her cases are psychological squints (imitative squints, jealousy squints, fear or shock squints, difficult children, psycho-neurotic parents, etc.). Muscular imbalance, heterophoria, vergence insufficiency, all these abnormal conditions may sometimes appear under the influence of psychological stress: worry, anxiety, fear, emotional upsets, domestic problems, etc. I have published several such histories, but psychological and organic factors usually both contribute in such cases. A mild anomaly, easily accepted in usual times, will suddenly cause serious distress when the patient is upset.

In a similar way do refractive errors, at times, bring on a discomfort out of all proportion with the physical condition. Many years ago Derby wisely advised against prescribing glasses to such patients complaining of asthenopia. A rather special case is the sudden appearance of a myopia due to a ciliary spasm. This is often psychosomatic in its appearance, but usually with an underlying abnormal somatic condition (Hyperopia).

Jelliffe ascribes myopia to a purely mental cause in some patients. He states that myopia appears at the time of puberty, and may sometimes be due to the patient's desire to exclude the outside world. He reports three cases of myopia: one with a narcissistic fixation, one with a perverse urge, and one with an Oedipus situation. These histories, however, are to my mind unconvincing. The ophthalmological side of the observations is non-existent; and, besides, either the myopia persisted and was a true myopia, only *coinciding* with the mental trouble (myopia is prevalent enough for this to be possible), or it disappeared and was really a ciliary spasm. I feel that such exaggerated claims for the mental causes of ocular diseases are apt to do harm.

Eye injuries are more or less likely to occur according to behaviour, and greater or lesser recklessness. Here again we can see how emotional stress may come into play. Dunbar has offered statistical evidence concerning the psychosomatic origin of many fractures, and this applies to other forms of trauma. I believe that some accidents are due to an imprudence which is almost desired by the patient's subconscious mind. They are the equivalent of an unadmitted suicide, and are often caused by emotional factors.

A blinking tic, with or without photophobia and lachrimation, will often be found to have an emotional background, and the attacks are usually precipitated by psychological factors. Blepharospasm is, of course, an organic state, but here again the spasms are often started by the trigger-action of an emotion. What causes Graves' disease, with its many ocular signs and symptoms, is still a moot point, but the importance of emotional stress is generally admitted, whatever may be the rôle ascribed to the hypothalamus.

In allergies, "an attack can be precipitated by an idea just as much as by an injection" was ably written by Gillespie, and his remark applies to ocular allergies as well as to others. We must not overlook the fact that besides the more usual allergic diseases we immediately think of, such as those of the conjunctiva, we must also consider the part played by allergy in the course, and in the relapses, of chronic infections.

Since psychosomatic disturbances are most usually mediated through the vegetative nervous system, and since nowhere is it more easy to recognize its tone than in the pupils, it is highly interesting to observe how these will respond readily to a psychological stimulus. This is well known to the layman; and how often does a novelist state that the pupils of his hero were dilated by fright? Any strong emotion will do this, but anxiety and fear are the most efficient ones (Bumke). A permanent dilatation, sometimes with a sluggish reflex to light, is found in many mental patients suffering from anxiety neurosis.

The pupils will also dilate suddenly under the influence of a painful stimulus (Budge), but this mydriasis is due less to the pain than to the mental state it has caused. It can also be produced by purely psychic factors, such as fear produced by suggestion, as is shown by Löwenstein's pupillographic studies. What he calls "the psychosensory restitution phenomenon" is most interesting in this respect: if a pupil is repeatedly stimulated by flashes of light, the photomotor reflex will gradually fatigue, and towards the 60th stimulation it will usually disappear, so that the pupil remains contracted. If a psychological stimulus is now applied—a suggestion of fear, for instance—the pupil will dilate, and the photomotor reflex is again prompt (see Fig. 1).

FIG. 1.

Pupillographic recording of a psychosensory restitution phenomenon. The pupil was stimulated by light 109 times. The light reflex gradually fatigued and was absent after the 60th stimulation. Between the 99th and 100th stimulation the patient was subjected to a suggestion of fear. The pupil dilated at once, and reacted to light. Reproduced from Otto Lowenstein's "Der psychische Restitutionsseffekt."

I would now like to mention the importance of psychosomatic phenomena in the course of chronic diseases. Diabetes, for instance, has, of course, an organic cause, but it is generally accepted that the onset can be caused by a moral shock, and also that, in the prolonged course of the disease, emotional factors can play an important part. I have just given an instance of such emotional changes of the blood-sugar level, and certainly there are many similar cases.

In the same way the part played by emotional upsets should be considered in the course of chronic infections, such as tuberculosis. Dunbar has stressed this, pointing out that these psychological factors may coincide with the onset of the disease or with relapses. I have noticed this several times in recurring uveitis. It is difficult to tell whether it is due to a sudden lowering of the patient's resistance to infection, or to a condition more favourable to allergic accidents. Both may have a close

relationship with the state of the vegetative nervous system, and we all feel that the latter can mediate psychosomatic disturbances.

It is above all in the central mechanism of vision that psychosomatic phenomena are evident. When the visual impulses have reached the calcarine area, they must be elaborated, integrated, and transformed into conscious perceptions. It is at this stage that psychological factors will be particularly cogent. A simple change in our degree of attention can considerably modify what reaches our full consciousness. At other times the disturbances can be more serious, and will produce visual suppression. Visual hysteria is naturally most prominent here, but other forms of neurosis—anxiety, for instance—can play a similar part. Hysteria is the most perfect type of a psychosomatic disease, but I cannot here dwell on its visual symptoms in detail.

The incidence and symptoms of war psychoneurosis are of course very familiar to all of you here, since some of the best papers on it have been published in this country, mainly by medical men attached to the Armed Forces (Doggart, Campbell and Cross, Livingston and Bolton, Wittkower and his co-workers, Michaelson, Hurst, Mahoney and Linhart, Werner Bab, Cameron and Stephenson, Todd, Gillespie, Symonds, Curran and Mallinson, Johnson, Hall, Ramsay, Tostevin, Bland, etc.).

Speaking for an hour on psychosomatic phenomena in ophthalmology will of course allow only a very sketchy outline. Every one of my paragraphs might be expanded and illustrated by detailed case-histories, but time will not permit. I shall leave this to others. May I only have made you conscious of the importance of such problems, not only from the theoretical but also from a practical point of view, because our therapeutic measures should be influenced by this outlook. We should probably prescribe less glasses and less medicines than we do, and talk with our patients a little more.

Of course we must realize our limitations. Often we can only suspect a psychological cause, and in serious cases this can only be ascertained by a psychiatrist who has the proper training and plenty of time. In many milder ones, however, we shall have to do the whole job ourselves: we must uncover the psychic disturbance, and we must help our patient. Of course we cannot turn into psychiatrists, but even elementary psychology, some understanding and simple human kindness will often prove useful.* More often we will need the co-operation of the psychiatrist, for the ocular symptom is only one of the ways in which

* The direct approach: "What worries you?" is in most cases quite useless. The best way is to have the patient talk quite freely about himself, his life and his past. Much of interest may come to the surface during this conversation.

the patient will express his psychic conflict. If we relieve him of his present complaint another one will appear, usually in a different field from our own, for the trouble is with the total personality: there is a deep conflict, and the present symptom is only an attempt to escape from it.

Another reason for my wishing ophthalmologists to be aware of these problems is that it would be highly desirable for them to share in this exploration.* Up to now it has practically been abandoned to the psychiatrists, and especially the psycho-analysts. The consequence is that their case-histories are beautifully written up from the psychiatric point of view, but the ophthalmic part is sketchy, and usually unconvincing. We certainly will often need the help of the psychiatrists, but they need our trained services even more, if serious progress is to be made, and the whole thing not laughed to scorn.

Some will not readily accept this new approach to our familiar medical problems, since it changes our usual outlook, and has widespread implications. We must not ignore the fact that, if we grant to the mind such great power over the body, and, in particular, that of making it ill, we may have to admit that it has also the capacity to undo its own mischief and even to heal. Of course we can qualify this: we can say that it will only be possible in the early stages, before any irreversible structural changes have occurred, before any secondary effect is present; but, even with these limitations, it will be a hard one to swallow for many of us in the medical profession, because it will lead us to accept the idea that miracles did not necessarily stop some twenty centuries ago, but may possibly still occur. It will oblige us to reassess in a new light such miraculous cures as are sometimes claimed to-day.

But this should not be a serious argument against a psychosomatic approach to medicine, for it would be unscientific to accept or reject findings because of their consequences. One must assess the facts on their own merit. I myself am far from accepting a lot of published nonsense such as an Oedipus situation or a narcissistic fixation as the cause of myopia, but I am also far from considering any longer that mind and body are two things definitely apart, with no pathological link, as I was taught in my medical school days.

* The exploration is at present very incomplete, as is exemplified by the scanty space devoted to visual disturbances in the book on "Psychosomatic Medicine", by Weiss and English. In this 650-page volume only 2½ pages deal with visual symptoms. Considering the high symbolic value of the eye, and the considerable anxiety caused by any disease affecting it, I am convinced that psychosomatic phenomena must be very frequent in ophthalmology.

We must examine these problems with an open and a critical mind. I was Babinski's intern many years ago, and when a patient showed a surprising symptom, an unexpected one, he never ignored it as many would have done. He used to draw his chair nearer and say: "Il faut regarder cela de très près," which is approximately: "Let us look into this very carefully." This is the method that led him to present the medical profession with the plantar reflex and with so many other signs which have become indispensable to the neurologists. This is how we should act with anything new, and with psychosomatic medicine in particular: Let us look into this very carefully, critically of course, but with an open mind.

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