How frequently are we consulted by some poor soul who had left home and arrived at the resort suffering, as he says, from a "slight throat trouble"; arrived may be in the beginning, and, perhaps, well advanced in pulmonary or laryngeal tuberculosis; without money, expecting to procure work to pay for his board and keep; arriving under the fond delusion that by climatic influence his trouble will soon disappear; with no conception of the necessities for recovery; no knowledge of the gravity of his disease; in many instances his chances were a thousandfold better at home among his friends, had he been told the truth, given explicit instructions, given less medicine and more time by his physician.

The tuberculosis patient who does not know his true condition rarely improves. As his case progresses he becomes discouraged and loses confidence in his medical advisers, thinking they do not understand his case. Can he be blamed?

On the other hand, the patient who is told the truth may temporarily be depressed, but he quickly responds and enters heart and soul into the fight before him. Rarely indeed do we find a patient who has been properly instructed and handled (without misrepresentation) who does not look forward to recovery. Phthisical patients are, as a rule, hopeful. Not so the patient who does not know what is the matter.

Intelligent pulmonary patients sent away from home without being told the truth frequently, from observation alone, find out their condition. When they make this discovery themselves it creates distrust of the physician at home and places the physician at the resort in an embarrassing position, where the truth from him now will reflect on the physician who may have referred the patient to him; or, he likewise must misrepresent the facts to the patient with the result that later he will be censured, with the home physician, for "not finding out what the trouble was."

True, there are exceptional cases where the patient is accompanied by the parent or some one who can control him, when the whole truth need not be given to the patient, but these cases are extremely rare. We have in the past relied too much upon drugs; we have been too free with our prescriptions and too careless in our instructions. If we would give the patients more of our time and less of our dope it would be better for the patient. The good results obtained from institution treatment of this disease are dependent, in a great measure, on the fact that the patients know their condition and are under constant supervision and instruction.

For the good of our tuberculous patients; for the protection of their friends and the public generally; for the protection of ourselves, both physically and from censure, let us fully inform our tuberculous patients as to their disease, and when so informed take the time to properly instruct them what to do and what to avoid.

To secure the proper position of the profession requires its unification, and unification can only be brought about by efficient organization, which, in turn, must be preceded by the enrolling of those who are to be organized. It ought to be made very clear that the man who, being legally admitted to practice medicine, does not unite with the local society places himself in the same relation to the medical profession that a bushwhacker does to an army. That man who manifests no interest in his profession will, in the last analysis, be very apt to forget the proprieties to be exercised toward the individual physician with whom he may come in contact.—Editorial, *Lekhigh Valley Medical Magazine*, June, 1895.

THE INFLUENCE OF CONSANGUINITY ON THE ORGANS OF SPECIAL SENSE.*

LEE WALLACE DEAN, M.S., M.D.

IOWA CITY.

In treating this subject I have found that I am compelled to confine myself almost entirely to the eye. It presents to us such possibilities for exact investigation that the results secured overshadow those gained from a study of the other organs of special sense.

We have here blood vessels and a nerve with its end organ exposed to view. We can look on mesoblastic and epiblastic tissue. We can observe embryonic conditions if they exist. With the exception of the nervous system, more degenerate conditions are found in the eye than in any other part of the body. As most of the deleterious results of consanguinity are degenerative conditions, we ought to expect this to be a good field for research. You will readily observe that this paper is not a complete treatise on this subject. It has been almost impossible to find literature relating to it. I can only give to you the results of three years of observation of cases and study of them.

It is entirely unnecessary to go into the question as to the influence of consanguinity on organism as a whole. Talbot very nicely answers this question when he says that if the parent stock is perfectly pure there can be no bad results from consanguineous marriage. But if the parent stock is not pure there may be serious consequences. It is so rare to-day to find a perfect parent stock. An apparently perfect stock may not be so because hereditary influences may be quiescent for generation after generation, as is shown by atavism. In order to bring before you the practical side of this subject and its economic importance, I wish to cite some cases. All cases where the name of the observer is not mentioned are cases that have come under my own observation unsolicited in the short space of three years. Some of these cases were reported to the American Academy of Ophthalmology and Rhinology.

CASE 1.—Male, age 17. Parents, grandparents, uncles and aunts had no serious eye trouble or degenerate stigmata. Parents were bright, well-to-do people. He has three sisters, Bessie, age 15, who is partially blind; Effie, age 9, whose vision is good, and Grace, age 4, who is blind. He has three cousins, one boy and two girls, all in the same family. Of these, Louis, age 16, is almost blind; Oran, age 19, can not count fingers, and the girl, age 13, seems to have unimpaired vision. The trouble in each case was retinitis pigmentosa. The fathers of the two families were brothers and the mothers sisters, and the fathers were cousins of the mothers. As the result of these two marriages we have in one family four children, three of whom are partially blind, and in the other family three, two of whom are practically blind.

CASE 2.—Female, age 14. Father and mother have brown hair. Parents were related. There is no history of malformation or other degenerate stigmata in the family. The girl is very large, but weak; she is not intelligent. Her hair is white; iris is a light blue. Examination of eyes revealed nystagmus, V.=6/24. Fundi without pigment. Diagnosis, albinism.

CASE 3.—Female, age 16. Parents second cousins. Patient's teeth were imperfect. She had but three upper incisors, one root germ not having developed. An examination of eyes revealed V.=fingers in 2 M. Her eyes are so small that she has to hold her lids open with her fingers in order to see. On the right side there is a congenital absence of the iris. In the left eye the cornea is elliptical, being 3 mm. wide in a

* Read at the Fifty-fourth Annual Session of the American Medical Association, in the Section on Pathology and Physiology, and approved for publication by the Executive Committee: Drs. L. Hektoen, F. B. Wynn and W. S. Hall.

horizontal direction and 2 mm. in a vertical direction. On this side there is a large coloboma of the iris, one-half of the lower portion being absent.

CASE 4.—Male, age 17. Parents are perfectly healthy. None of his ancestors have shown any signs of degeneracy so far as could be learned. His father and mother were first cousins. He has one brother and two sisters. One of his sisters is an idiot. She has microphthalmos, misplaced ears and other signs of facial degeneracy. The patient is exceedingly simple-minded. His ears are large and placed at right angles to the head. The helix is deformed. His face is covered with a growth of silky hair. The lower jaw is exceedingly small and is retrusive. He has no adenoids, but always keeps his mouth open. Examination of the eyes reveals on the right side a microphthalmic eye with a coloboma of the iris and choroid. On the left side there was an apparent absence of the eye. There were two small lids and a socket. No eye could be felt by introducing the finger in between the lids and feeling about in the orbit. The lower part of the socket was deformed. The union between the malar and the superior maxillary bone had never taken place. There was a space one-fourth of an inch wide between the two bones. The patient was given an anesthetic and a dissection of the contents of the orbit was made. The fissure between the malar and the superior maxillary bone was found to extend back to the sphenomaxillary fissure. In the apex of the orbit, lying closely against the optic foramen, was found a rudimentary eye. It was removed. It was about one-third of an inch in diameter. With the naked eye no change indicating the cornea could be detected. The eye was hardened in formaldehyd and alcohol and stained with hematoxylin and eosin. The eye was composed of an outer thick fibrous coat. The cornea could only be differentiated microscopically from the sclera by the absence of an inner lining of pigmented cells. The eye was filled with a myxomatous tissue much more solid than the normal vitreous. It contained some blood vessels, one of which was very large. No trace of retinal elements could be found. The internal structures seemed to have all undergone a myxomatous and mucoid degeneration. The lens and retina seemed to be absent.

CASE 5.—This is not a single case, but the report of a family with six children. The father and the mother were both dark complexioned. There was no history of any degenerate condition in the family. They were first cousins. They had but six children. Of these, two were dark complexioned and had good vision. The other four were albinos and had a vision of 6/12 or less.

CASE 6.—Female, age 5. Parents were first cousins. No history of any serious eye trouble or of degenerate conditions in family. Child was very dull. Left eye began to enlarge shortly after birth. O. D. apparently normal. O. S. very much enlarged. Tension normal. Diagnosis, congenital glaucoma left. The left eye was enucleated. The usual cupping of the disc was present. Microscopic examination failed to reveal any obstruction of the canal of Schlemm.

CASE 7.—Female, age 6 months. This case I saw in consultation with Dr. Cooling of Wilton Junction, Iowa. Parents were healthy. No history of any tumor or eye trouble in the family could be elicited. Parents were first cousins. The parents said that two months before the right eye began to increase in size and a few weeks later the left began. The child apparently could not see. Pupils were dilated; would not react to light. Tension in right eye +2, and in the left +1. Both eyes were enlarged, the right the more. Lying behind the iris in each eye could be seen a large tumor. Diagnosis, double-sided neuroepithelioma. Four months after the child was seen it died.

CASE 8.—Male, age 4. Parents' and grandparents' history negative. Parents cousins. Boy has congenital coloboma of iris in each eye and anterior polar cataract in the right eye.

CASE 9.—This is a family reported by Dr. Vail. Parents cousins. Consanguinity was positively denied for a year. Parents' and grandparents' history negative. As the result of

the union seven children were born. Five had congenital cataract. The cases were so helpless that Dr. Vail recommended that no more children be born.

CASE 10.—Dr. Alt reports a family in which there is constant intermarriage. Senile cataract is hereditary in the family. In the last generation several cases of congenital cataract have made their appearance. If there is any relation between the senile cataracts and the congenital the former must be hereditary cataracts not the result of a sclerosis of the nucleus of the lens, but rather a nutritive disturbance. One could not think of the former condition appearing in children.

CASE 11.—Female, age 12. Parents' history negative except that they were first cousins. Is an only child. Has simple atrophy of the optic nerve.

Of 181 blind children in the Iowa College for the Blind in 1900, 9, or about 5 per cent., were the result of consanguineous marriage of the first degree. The number of consanguineous marriages of the first degree in Iowa is far below 0.5 per cent. I ought to say that it is exceedingly difficult to secure a history of consanguineous marriage when present. There were probably others present in the college the result of consanguineous union.

If we exclude from the list those blind children who were blind because of blennorrhoea neonatorum, sympathetic ophthalmia, trachoma, etc., and consider only those who suffered because of congenital conditions, we would find that 14 per cent. were the result of consanguineous marriage of the first degree. These figures seem large. I do not think they ought to be considered as indicating the relative proportion of degenerate eyes in families the result of consanguineous marriage and in those not, because we are considering here only one field. Among the pupils who have entered the college since 1900 the per cent. is about the same.

Two factors may enter into the production of many of these conditions: 1. The eye is really an outgrowth from the brain, and is consequently subjected to the same conditions as the central nervous system during its development. 2. The eye is changing, and an organ that is adapting itself to new conditions is more liable to malformation than one with a constant condition. The socket is becoming less deep and the superciliary ridges less marked. Fuchs believes that in families with school myopia the eyes have adapted themselves to their work.

A number of interesting things are suggested by these cases: 1. The relation of the inheritability of a condition to its production by consanguineous marriages. I would judge from these cases that the greater the inheritability of a condition the more liable is it to be the result of consanguineous marriages. Theoretically, this would also be the case. Retinitis pigmentosa is a disease of great inheritability. I have now under observation a grandfather, a mother and a son each with retinitis pigmentosa. As it is a comparatively rare condition there is not the chance for doubting the tendency of its appearing by marriage of individuals not related as the more common conditions.

The influence of consanguinity on retinitis pigmentosa has been mentioned by several. Dr. Liebreich says that of 26 cases of retinitis pigmentosa, 53.8 per cent. were the result of consanguineous marriage. Magnus reports 33 per cent. of cases of retinitis pigmentosa in children, the result of consanguinity. Of 66 cases reported by Chapault, 45 per cent. were the result of consanguineous marriage. Of 18 cases under my observation where the history of the parents could be secured, 8, or 44 per cent., were the result of

consanguinity. Schobel¹ says it is generally dependent on consanguinity. A very careful examination into the history of the ancestors of the cases I mentioned failed to reveal any eye trouble of importance. Yet in the first group mentioned we have these cases appearing by intermarriage in the two groups when consanguinity took place. Albinism has a strong inheritability. Congenital cataracts have also strong inheritability. Most of the cases mentioned were not true cataracts, but capsular opacities, the result of non-absorption of fetal structures. In approximately one-third of the cases, however, the capsule was not opaque, but the lamellæ were affected.

Some light may be shown on the cases reported by Dr. Alt, where congenital cataracts appeared in the offspring of relations suffering from senile cataract by the fact that hereditary cataracts some time appear earlier in each succeeding generation. I know of a case where the grandfather developed cataracts at about 50; the mother had one at 35, and the son had congenital cataracts.

2. It is interesting to note that where there is an arrest in development, as in the cases of microphthalmos, coloboma of the iris, congenital cataract, and anophthalmos, the eyes are in an opposite state to those of eyeless fishes and worms where they have been lost by disuse. Wagenmann² has found that the lens and the retina were almost the least of the structures acted on, and that the phyletic degeneration does not follow the reverse order of development. The eye does not resemble part embryonic conditions as in the eyes where there is an arrest of development. At birth the eye is almost normal, but with age it degenerates. The microphthalmic eye improves the first ten years after birth, owing to a diminution of the hyperopia. A third point in connection with these cases is the resistance after operative procedures. Dr. Gruber of London writes me that he has operated on a number of such eyes with good results. I have never seen any serious sequelæ following an operation. While there is an arrest of development, the nutrition is apparently normal.

As to the influence of consanguinity on the neuroepithelioma, I would certainly not express any opinion. I simply mention the case as I found it while conducting my investigations.

DISCUSSION.

DR. J. W. FOSS, Phoenix, Ariz.—This subject of inbreeding is given a great deal of attention by stockmen, but is neglected by human beings. About two months ago I visited an ostrich farm near Phoenix, and they had just hatched out eight or ten chicks, and out of the lot, because of physical deformities, there was only one it was possible to save. This was the result of interbreeding. It costs so much to get a male ostrich from Africa that to save expense they interbreed and get few perfect offspring as a result. This paper gives us the key to our duty as physicians, and we can prevent many of these consanguineous marriages by firmly and persistently impressing on our patients and friends the unfortunate results of such union.

1. System of Diseases of the Eye. Norris and Oliver, vol. III, p. 460.

2. Archiv für Entwickelungs Mechanik der Organismen, 8, 4.

Sylvius the Medical Grammarian.—J. D. Sylvius, M.D., born in 1478, whose name is so associated with the anatomy of the brain, was a famous grammarian in his day and wrote a popular Latin grammar. The *Gaz. Méd. de Paris* states that he was the first to propose and use two distinct letters for i and j, and for u and v. He was also the originator of the French accents, distinguishing between the three sounds of e: e, è and é. Several members of the Estienne family, the celebrated printing firm, were physicians likewise.

New Instrument.

A PERITONEUM KNIFE.

JOHN R. COOK, M.D.

FAIRMONT, W. VA.

The accompanying illustrations show a new instrument, a peritoneal knife, which I have found a very convenient device for quickly enlarging the peritoneal opening after making the

opening in the usual way. The beak of the knife slides just under the peritoneum, hugging the same closely, and in this way all danger of wounding the intestines is eliminated.

I also find it very convenient in enlarging the abdominal ring in operations for the reduction of hernia. As will be seen, the blade is long and will divide all tissues, if necessary, from within outward.