is it specially a disease of children who are probably resident at the place of their birth, but in severe cases the disease prostrates so rapidly that it is not possible to remove them even if the parents were inclined.

The incidence of diphtheria is the most singular point in connexion with the disease. I know of no fact so striking from a preventive-medicine point of view as the comparative rarity of diphtheria in urban as compared with rural districts; or, considered in another way, in unhealthy as compared with healthy districts. The frequency of the occurrence of diphtheria is inverse, not only to the general death-rate, but also directly and invariably to the frequency of typhoid fever. This fact has been forcibly brought to my notice in my own district, where, with a population of rather more than two hundred thousand, of which rather more than one hundred thousand are rural and rather less than one hundred thousand urban, the number of fatal cases of diphtheria in the rural portion is nearly three times that in the urban portion, although the cases in the rural district are restricted almost exclusively to certain well-defined areas. This is by no means a local peculiarity.

In the accompanying tables (III. and IV.) and chart I have taken ten representative large towns and ten counties not containing large towns, and have compared the death-rate from diphtheria and typhoid in each. The difference is striking, but, from the experience of my own district and for the reasons stated above, I have no doubt that if it were possible to express statistically the mortality of ten purely rural areas in place of the ten counties, the difference in the tables would be more striking. This, however, is not possible, owing to the deplorable fact, which I trust will soon be amended, that registration districts do not coincide with sanitary districts, and, except in large towns or purely country districts, too generally express in their statistics the mean of two extremes—an external area with a low death-rate, and a populous nucleus with a high one.

I at one time felt disposed to attribute the explanation of this remarkable chart to the very close and mysterious connexion which I know to exist between diphtheria and typhoid fever, and I had almost persuaded myself that the two diseases were occasionally interchangeable, and that the diphtheritic peculiarities were the result of the modifying influences which, as I have stated before, prevail in houses and districts constantly liable to diphtheria. I have indeed, on more than one occasion, seen an epidemic of diphtheria prevailing around a town where there was an epidemic of typhoid fever, no cases of diphtheria occurring in the town and none of typhoid in the country; and I have some evidence that sporadic outbreaks of diphtheria are more frequent around towns where typhoid fever is endemic.

The connexion of these two diseases is most obscure, but the undoubted fact remains that the prevalence of the one is inversely that of the other, and the explanation of it may to a certain extent, I think, be found in the fact stated above by me, that in its origin diphtheria is most specially connected with structural dampness of habitation, and in its severity, to a large extent, with bad water—conditions more frequently found in rural than in urban districts. If this opinion is correct, the mortality from throat affections must have been more evenly divided in old days before the subsoil of towns was drained as at the present time. Histories of the old epidemics seem to give some evidence in favour of this view, but, owing to the limited number of cases and the large number of sources of error, it is most difficult to apply the statistical method to this investigation. And although the well-known researches of Dr. Buchanan into the results following the drainage of towns do not bear out this view, I feel sure that that gentleman would be the first to admit that, owing to the alterations in the nomenclature and other causes, his statistics would not apply to diphtheria.

One noticeable feature in this most remarkable chart is, that whilst Birmingham ranks on the fever line with the healthy country districts, and has a mortality from that disease less than any other large town and half that of Liverpool, on the diphtheria line it also ranks with the counties, and has a mortality from diphtheria far exceeding that of any large town, and indeed double that of Liverpool. I am informed by Dr. Hill, the esteemed medical officer of health for Birmingham, that diphtheria is in that town very much confined to the highest and best-drained parts of the town where typhoid fever is least prevalent. He believes it to be connected with sewer gas, but that, to a certain extent, its prevalence in Birmingham is owing to the high and exposed situation.

THE CONNEXION OF THE DISEASE WITH LOCAL CONDITIONS.

On looking through the systematic works on Medicine, both English and foreign, I have been struck with the absence of almost any reference to a connexion between the disease and local influence, either in origin, dissemination, or severity, and the ablest writers of monographs on the subject either do not refer to it at all, or go out of their way to deny that any such connexion exists, and the few writers who refer to this point at all do so in the most general terms.

Whilst I believe that no very close connexion can be traced between the incidence of diphtheria and what are broadly known as geological formations, there is the closest connexion between certain conditions of subsoil and situation of house and the disease. Whatever promotes dampness of habitation, whether it be by capillary attraction from the ground below, or the earth at back of the house, from the construction of the house of porous sandstone in one district, or of shale in another, or of badly burnt brick in another, the result is the same.

I can point to diphtheria fields in low localities on alluvial gravel, shut in by hills, in which the water is held up by the clay beneath and the hills on the side, and to others on elevated localities, where a flat table-land and stiff clay equally prevent the water running off.

I can point to isolated houses which have been attacked by diphtheria at intervals of years, where the dampness has chiefly resulted from the house being shut in and closely surrounded by trees, with in some cases the earth at the back almost level with the eaves. Whatever conditions seem to favour fungoid growth would seem to favour the incidence and persistence of the disease, and the explanation of the comparative freedom of towns from the disease may be the presence of something in their atmosphere inimical to such growth.

M. Trousseau appears to have formed his opinion, that the disease had no connexion with local surroundings, from the fact that he had seen it raging equally in low undrained localities and on breezy heights. I have been called upon on several occasions to investigate outbreaks of diphtheria on elevated open localities, and have invariably found the same condition of dampness of habitation caused by faulty construction of the houses in localities where there was a stagnation of water, either from a flat table-land with an impervious subsoil, or more frequently from the locality being the division of a watershed, which is always a cause of stagnation of water. There may be another reason why exposed situations should be subject to such outbreaks. It has seemed to me that where diphtheria is endemic the disease is capable of being excited by an ordinary attack of inflammatory sore-throat, resulting from exposure to cold.

I have previously stated in what way sanitary defects connected with excremental filth exert an influence on the dissemination and mortality from diphtheria. I believe the connexion exists so far and no farther. For the origin we must look to other causes.

(To be concluded.)

PAPILLARY ULCERATION OF THE VAGINAL PORTION OF THE UTERUS AND ITS TREATMENT.

BY ROBERT BELL, M.D.,

PHYSICIAN TO THE GLASGOW INSTITUTE FOR DISEASES OF WOMEN AND CHILDREN.

THIS form of ulceration of the os uteri is generally developed from the simple excoriation of the mucous membrane so often met with, and is evidently due to the papillæ being constantly irritated, till at last they become developed into granular elevations; but as the affection is invariably accompanied by quite a train of symptoms, it will be as well to give a detailed account of what is observed in patients suffering from this disease. To do so in the most satisfactory way, I will take a well-marked case and describe the condition of the patient when she presented herself for treatment.

Mrs. D—, aged thirty-two, has had four children, the youngest of whom is three years of age, but since the birth

of this child she has not enjoyed good health. She did not make a good recovery after the confinement. This, however, is not to be wondered at, when we learn how she conducted herself after that event. She informs me that she sat up in bed on the day of accouchement, and got up the next day "to have her bed made," as she called it. This operation must have occupied two hours, as she sat up in a chair during that time. On the third day after delivery she rose and began to do household work, and from that date resumed her domestic duties. This woman says the lochia continued for six weeks, and was succeeded by leucorrhœa, which has constantly been present since, always excepting, of course, the menstrual periods, which have been quite regular, but at every period the discharge has been more or less profuse; and for a few days before the menses commenced, and for a like period after they ceased, the leucorrhœal discharge has been more copious. On questioning her closely it is ascertained that there is a constant bearing-down feeling, and excessive pain over the sacrum, especially after any exertion. The muscles of the back, especially over the lumbar region, are very weak, which makes her feel as if she "would fall to pieces." There are pains shooting into the loins and down the thighs. The bladder is exceedingly irritable, and so is the rectum, but not to the same degree. The functions of the stomach are also very much impaired, and, as a consequence, there is sickness and most persistent acid dyspepsia with all its concomitant evils. The stomachic disorder is very much aggravated by an over-indulgence in tea, stewed meat, potatoes and broth. There is also great depression of spirits and gloomy forebodings, and a host of hysterical symptoms besides. To make matters worse, she cannot sleep well, and even after some hours' sleep there is no consciousness of any refreshment having resulted from it.

On examination the vaginal mucous membrane is found to be turgid and red, and unduly sensitive to the touch. The vaginal portion of the uterus is hypertrophied, and around the os the finger detects a sponginess of the mucous membrane, and the lips are everted. On introducing the sound, hæmorrhage to a small extent is induced. The uterine canal measures three inches. The speculum reveals a granular ulcer extending both outwardly and inwardly from the external os. This has evidently been due, in the first place, to erosion of the papillæ, which, by continued irritation, has developed into this granular condition. The slightest touch causes it to bleed very freely. The above is a very ordinary form of uterine disease, which has the effect of rendering the poor patient's life quite a burden to her. Fortunately, however, the disorder is very amenable to treatment, and gives, therefore, great satisfaction to the physician as well as to the patient.

The treatment commonly employed in such a case is the uterine douche night and morning, which the patient uses herself, while an application twice a week of a moderately strong solution of nitrate of silver is made by the physician. For some months past I have had recourse to another, and, I think, very much more satisfactory mode of treatment, inasmuch as very speedy relief is given to the pain, and the leucorrhœa soon ceases. The patient, in fact, is relieved in half the time that would be required under the old plan. All the discharge is wiped away by means of cotton-wool, and then Archangel tar is applied to the diseased surface on a pledget of cotton. This is allowed to remain in contact with the ulcerated part for twenty-four hours at least, when the patient withdraws the cotton by means of a piece of string which has been left for the purpose. The application is made twice a week, and in from two weeks to a month the cure is complete. The tar is made fluid by the addition of one part of rectified spirits to eight parts of pure Archangel tar. This application has another great advantage besides its healing properties: it acts as an anodyne; and then a further benefit is derived from the support which the pledget of cotton-wool gives to the enlarged uterus. It sometimes happens, however, that the granulations in this disease take on a luxuriant growth, and may present an appearance which resembles very closely a cock's comb. The French call it *ulcerations fongueuses végétantes*. When the disease has advanced thus far it is, as will be readily perceived, a most frequent cause of metrorrhagia, and, moreover, is not unapt to take on a cancerous degeneration. As bleeding is so readily induced in such cases, it is well not to irritate the surface of the ulcer by the application of any hard substance, such as the stick of nitrate of silver or nitrate of lead. My general plan is to apply on a piece of cotton-

wool the fuming nitric acid, and to do so very lightly. It has been recommended to use the glacial acetic acid every second or third day; but as the weekly application of nitric acid more rapidly effects a cure, it has the advantage of being less troublesome to the patient. In some cases it will be necessary to excise the excrescence with a pair of scissors, and then cauterise with the hot iron. Besides the local treatment, it is necessary to regulate the bowels and attend to the digestive organs. Then it is imperative in every stage of this disease that the patient should recline during the greater part of the day, so that the hyperæmia of the uterus may be alleviated and thus conduce to a reduction in the bulk and weight of the organ.

Glasgow.

REMARKS ON ACNE.

BY JAMES CUMMING, M.D., F.R.C.P. EDIN.;

EXTRA PHYSICIAN TO THE ROYAL HOSPITAL FOR SICK CHILDREN; PHYSICIAN TO THE NEW TOWN DISPENSARY, EDINBURGH, ETC.

ACNE was known to the Greeks under the synonym *ζονθος* (literally the root of a hair), an eruption of the face which usually accompanies the first growth of the beard. Aretæus,¹ a contemporary of Galen (who is supposed to have flourished about the middle of the second century of the Christian era), in alluding to the application of the juice of thapsia as a remedy for cephalæa, says: "Θαψίης ὁ ὀπός, καὶ τὰ ἐν τῇδε φάρμακα, ὀκῶσα ἐσοῦναι τὸ δέρμα καὶ ζονθοῖσι ἵκελα ἐκφύει βλαστήματα." To the Romans it was known as "vārus" (a pimple or eruption on the face). Celsus has a short chapter on Vari, Lenticulæ, and Ephelides, in which he summarily disposes of this skin affection as follows: "Pæne ineptiæ sunt curare varos, et lenticulas, et ephelidas."

Anatomy.—The seat of acne is the hair-follicle and the sebaceous glands which open into it. The accumulation of sebaceous matter prevents excretion from the glands, acts as an irritant, giving rise to inflammation of the follicle, with congestion of the skin, and leads to a disturbance of nutrition in the surrounding cutaneous tissue. It is often accompanied by the formation of comedones, constituting that form termed "acne punctata." Occasionally there is merely seborrhœa without inflammation. Acne is usually present where the follicles are largest and most numerous, as on the face, shoulders, and back; and is absent on the palms of the hand and soles of the feet. It generally appears about the time of puberty (from eighteen to twenty-four years of age); it is perhaps of more common occurrence in females, and is ascribed by many to be connected with deranged menstrual functions. Under the general term, genus Acne may be subdivided into several species: Acne simplex or vulgaris, commonly accompanied by seborrhœa; A. punctata; A. pustulosa; A. hordeolaris; A. disseminata; and A. indurata, due to congestion of the follicles, with thickening by inflammatory products. Hebra describes a form having for its seat the forehead—A. frontalis. Another large class common to persons of a strumous diathesis, &c., is known as A. cachecticorum; and, lastly, a class in which this affection is produced by the use of various internal remedies, such as iodide and bromide of potassium, and by the external application of tar. Certain articles of diet have been mentioned as exciting causes—viz., salt fish, oatmeal, pepper, ginger, &c.,—but apparently without foundation. It is more probable that a passing form of urticaria may be created by the consumption of such articles. Acne rosacea is a separate and distinct form, and is not necessarily confined to the sebaceous glands, as other tissues are usually involved. It generally appears at a later period of life than the species first alluded to, and in females may, in the majority of cases, be traced to certain menstrual derangements.

Treatment.—Regarding the treatment, we find that many drugs have been employed. Paulus Ægineta recommended the application of an ointment containing wax, turpentine, and viscum album. Celsus² employed a mixture of resin, alum, and honey: "Sed vari commodissime tolluntur im-

¹ Αρεταίου Καππαδοκίου τα σωζόμενα.

² A. Corn. Celsi Medicinæ, liber sextus, cap. v.