patient in childbirth. This is the experience of my excellent friend, Braxton Hicks, and many other obstetricians of the advanced school. Natural facts have still, however, to contend much against popular error or prejudice. *Opinionem enim commenta delet dies naturæ judicia confirmat*; but we have no fear for the result.

ART. VI.—*Observations tending to show the Identity of the Fungi of Favus and Tinea Circinata.* By JOHN M. PURSER, A.B., M.B., T.C.D.; Demonstrator of Anatomy in the Carmichael School of Medicine.

IN an interesting paper^a by Dr. McCall Anderson, recently published, in which he attempts to prove the non-identity of the fungi which produce the diseases known as favus, tinea tonsurans, and pityriasis versicolor, the following statement occurs:—"Of the numerous instances on record of the transmission of favus and tinea tonsurans *from the lower animals* by contagion or inoculation, favus has always given rise to favus, and tinea tonsurans to tinea tonsurans" (p. 234). This conclusion is supported by several cases both from Dr. Anderson's own practice and from that of Bazin, Gerlach, Bärensprung and Köbner, and, so far as I know, at the time of the publication of the paper in question no instance of a contrary nature was extant. The following cases, therefore, in which favus appears to have produced tinea circinata (which Dr. Anderson and most other dermatologists believe to be identical, as far as the fungus is concerned, with tinea tonsurans and sycosis), both by accidental contagion and intentional inoculation, may be of some interest as bearing on the question, still unsettled, of the identity or non-identity of the fungi which occur in the different epiphytic diseases of man.

In October last I was called on to attend a family, four members, of which, all adult females, were suffering from ordinary tinea circinata. The spots affected the hands, arms, and shoulders; were of various sizes; presented a centre of sound skin and a spreading furfuraceous edge; itched a good deal; and, in short, presented a typical example of ordinary ringworm, so much so that, contrary to my usual custom, I neglected to make any microscopic examination of the epidermic scales. The disease was recent, and yielded readily

^a British and Foreign Medico-Chirurgical Review, July, 1866.

to treatment. A few weeks afterwards, when the spots were all well, or nearly so, on talking over the possible manner in which the disease might have been contracted, I was asked by one of the patients if it could have been taken from a cat, mentioning at the same time that one of her cats had had a spot on its paw, which she, thinking it was dirt of some kind sticking in the hairs, had tried to pick off, but found that her attempts made the paw bleed. Shortly after this she remarked spots of ringworm on her own hands. On inspecting the cat I found that it had on its left fore paw a small spot, from which the hairs were almost completely absent: this was covered by a raised crust of dry powdery consistence, and sulphur yellow colour, through which passed a few stunted hairs. There was no cupped appearance, but the naked-eye characters of the crust resembled much those of some varieties of favus. I learned further, that another cat living in the same house had had a similar patch on its nose, which was now well. I inquired as to the mice, but could get no reliable information. Microscopically, the crust from the cat's paw was seen to consist almost entirely of the spores and filaments of a fungus. The spores were large, many of them oval, and present in considerable quantity. The filaments were branched and abundant. These appearances were identical with those which I had seen in cases of undoubted favus; but mistrusting my own limited experience in a matter of such delicacy as the diagnosis of a fungus, I sent a portion of the crust to Dr. Tilbury Fox, whose opinion on such a subject no one will be inclined to question. He pronounced the fungus to be an admirable specimen of the *achorion schönleini*, the parasite of favus. In the meantime I had inoculated my own forearm with the fungus, by scraping off the superficial layer of epidermis, and laying on the denuded place some of the crust reduced to powder, and covering the whole with a piece of sticking plaster. The plaster was removed after a hundred and twenty hours, during the latter part of which time there was intense itching of the inoculated part. There then appeared a circular spot on the forearm, the shape and size of the plaster. The centre was covered by large, loose flakes of epidermis, separated probably in consequence of the retention of the perspiration. They adhered by only a few points to the subjacent parts, which consisted of skin, reddened and softened from absence of horny epidermis, but presenting no sign of eruption. Around this was a slightly raised and furfuraceous border, and outside this again a circle of inflamed skin covered with minute vesicles. After

exposure to the air for some hours, the central scales separated; the skin beneath assumed a more healthy colour and appearance, while the spot continued to spread centrifugally by the formation of successive crops of vesicles. These vesicles were extremely small, of subglobular shape, formed with great rapidity, and dried up quickly, leaving a furfuraceous crust. There was some difference of opinion among the physicians to whom I showed the spot as to what the disease should be called; but those who carefully observed the healthy centre and the spreading edge thought that it most resembled herpes circinatus, while all agreed that it had not the least resemblance to favus. Part of the crust was found by the microscope to consist chiefly of epidermic scales, mixed with which were a few pus or exudation corpuscles, a considerable quantity of the mycelium of a fungus, and a few spores. A specimen was sent to Dr. Tilbury Fox, who stated that the mycelium presented the characters of *trichophyton* rather than *achorion*; that it differed from the latter in being smaller, less freely branched, and containing fewer granules. The spores were small and round, none large or oval. He further says, "You clearly have a condition which presents, microscopically, the characters of *tinea circinata* (*herpes tonsurans*), but which may be only an early stage of favus; but this is exactly what, I argue, arises." Dr. Fox was also so kind as to show specimens of both fungi at the Pathological Society of London. After some days, as the spot continued to spread with unaltered characters, and as the itching had become so severe as seriously to interfere with my comfort, the crusts were removed. They were never renewed. The patch spread but little after that. It gradually died away with considerable desquamation, leaving a brown, discoloured spot, which persisted for several weeks. I had intended to attempt re-inoculation from my arm to a cat or rabbit, but was prevented at the time. Subsequently a second inoculation was made on another part of my forearm, which produced a diseased patch, presenting the same appearances, both to the naked eye and microscopically, as the former, but before I could continue the experiments, circumstances occurred which obliged me to relinquish the entire investigation.

It is unnecessary here to dwell on the mere fact of the transmission of disease from the brute to man, an event which is universally allowed at present to be not only possible but of frequent occurrence; but, as I have already stated, in all the hitherto recorded cases, favus has produced favus, and tinea

tonsurans tinea tonsurans, whereas here we have favus in the animal giving rise, by contagion, to tinea tonsurans in the human subject; and the fungus, which, when growing on the hairy skin of the cat, under what we may suppose favourable conditions, appeared as *achorion*, with large spores and well-developed mycelium, on being transplanted to the human skin, where the hair follicles were few, and moisture deficient, changing its form to that of *trichophyton*, which is considered by many to be only an imperfect development of *achorion*. A change of a somewhat similar kind, produced also by transplantation of the fungus from a hairy to an uncovered part, is mentioned by Dr. Fox;^a but in this instance both forms of disease occurred on the same patient, favus of the scalp giving rise to tinea circinata of the shoulders and neck.

It is not my intention to go over all the evidence which has been adduced by writers to show that the apparently different fungi met with on man are all varieties, or different stages of growth, of the same plant, the diversity in form being due to differences in the soil on and the conditions under which they grow. It is, indeed, difficult to understand the opposition which, in the face of such evidence, this view still receives, at a time when the limits of variation in form of animals and vegetables, produced by external circumstances, is acknowledged by naturalists to be so wide. When we consider the slight differences in conditions of growth, which, in experiments on the germination of fungi, have sufficed to produce very different forms, we should rather be surprised that the variations occurring in the transmission of parasitic fungi from one person to another are so rare. Thus we read^b that "Dutrochet took a solution of albumen, and examined it from time to time. At the expiration of a year nothing had occurred; he added some acid, and monilia was produced; conversely he added an alkali, and botrytis resulted. Thinking that the agency of the reagent might have had some special influence, instead of albumen he used fibrin, and, curiously enough, he obtained just the very opposite result. Fibrin and alkali grew monilia, and fibrin and acid botrytis." There is some reason to believe that if the history of the source of contagion in each case of parasitic skin disease could be made out, and if more care were given to the determination of the microscopic characters of the fungi, instances of variation in the latter would be found to be more frequent than is at present supposed.

^a Skin Diseases of Parasitic Origin, p. 126.

^b Fox, loc. cit., p. 100.

In conclusion I have to notice a paper,^a lately published by Dr. Salisbury, in which he describes a disease very common in cats, produced by the growth of a fungus, and very readily spreading by contagion to human beings, giving rise in them to a disease very like ordinary ringworm, but differing from the latter so much as to lead Dr. Salisbury to call it "a newly discovered disease," and to give it a new name, derived from its origin, *trichosis felinis*. It affects principally young cats, rarely spreading to their elders. The milk with which the paws and face of kittens are often smeared is believed to furnish a suitable soil for the germination of the fungus. Of human beings children are chiefly attacked. In them the disease spreads in isolated patches to all parts of the surface, often in a few days time. The patches are of various size, circular or oval in shape, slightly elevated above the surface, red and covered with scales and little elevations, marking the position of the hair follicles. The colour of the patches is deeper, and the irritation and itching more severe than in ordinary *trichosis*. The fungi also differ. "In ordinary ringworm (*trichosis furfuracea*) the fungoid cause exists mostly in the spore state. The plant does not advance beyond its cell condition. Its growth seems to be confined simply to cell-multiplication by pullulation. In this disease (*trichosis felinis*) the plant cells multiply by pullulation, and these advance to the filamentous stage of growth." From the drawings of the fungi which Dr. Salisbury gives, the spores are seen to be oval, containing one or two nuclei, provided with buds or off-sets, or occurring in chains. The mycelium is branched, jointed, with cellular interruptions, and contains no granules or spores. These characters are unaltered by the passage of the fungus from the cat to the child. In this respect the cases differ materially from those detailed in the present paper.

ART. VII.—*Cases in Private Practice of more than Ordinary Interest.* By JOHN FRANCIS M'VEAGH, M.D., L.K.Q.C.P.

As I believe it is incumbent upon every physician to bring before the notice of his profession any case that may prove instructive, or

^a A brief description of what appears to be two newly discovered skin diseases, one originating in the cat, the other in the dog. Both cryptogamic and contagious, and both capable of being transmitted from the animal to the human body. By J. H. Salisbury, &c.—*American Journal of the Medical Sciences*, April, 1867, p. 379.