

*With the Author's
Kind regards.*

ON

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CROSS FURROWS IN THE
NAILS.

BY

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LATE ASSISTANT SURGEON TO THE HOSPITAL.



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THESE are more than pathological curiosities and are worthy of observation for what they indicate. That they occur much more commonly than is thought is more than probable, and I am accustomed to feel sure of finding them under very different circumstances. It was in the year 1870 that my attention was called to them by some remarks of Dr. Langdon Down and Dr. Wilks, at the Pathological Society, and it may be certain that any observations by these original observers and experienced pathologists are worthy of careful notice. In Dr. Langdon Down's case, which is recorded in the twenty-first volume of the Pathological Society's 'Transactions,' the cross marks on the nails were of the nature of opaque white lines, and were evidently connected with temporary arrests of nutrition. But if I remember rightly, he also mentioned the occurrence in himself of the simple furrows which I am discussing, and attributed them also to general defects of nutrition. Dr. Wilks gave examples of the same from his experience, and in the thirty-ninth volume of the 'Transactions' gives an illustration of the furrows occurring apparently from two bouts of sea-sickness in a patient. This engraving may be accepted as giving an excellent picture of the peculiar condition.

Since the year 1870, I have kept records of these furrows

in the finger-nails of patients from time to time, and my object here is to give, as far as I can, the conclusions at which I have arrived, and what may, I think, be learned from a careful observation of them. A further and more extended series of observations from medical practitioners, who have better means of tracing and following the life-history of these cases, may lead to useful conclusions and to new and practical ones.

Character.—For some time there is only a transverse shallow furrow, and this when near the lunula is difficult to identify. When it arrives at about the middle of the nail, *i. e.* about half way from the lunula towards the free edge, it is generally distinct, of marked depth in many cases, deeper in the centre than towards the side of the nails, and often dotted, but this dotting seems more common in nails which have longitudinal furrows and ridges. Later on sometimes, but not, I think, generally, an opaque white line may occupy the position of the furrow.

When appearing.—This is difficult to determine, for the groove is at first very shallow and ill-defined. But three months after an illness the furrow is usually well marked across about the middle of the nail.

Rate of movement of the marks.—This varied in different cases, as might be expected. Measurement was in all cases taken from the lunula as the only fixed line. After becoming well established the transverse furrow moved towards the end of the finger-nail

3.5 mm. in 29 days	} in three different cases.
„ 40 „	
„ 49 „	

They remain visible on the nails for a period of four to six months.

Seeing how the rate of growth in nails varies in the same individual according to circumstances, such as the time of year, use of the fingers, exposure to warmth, moisture, cold, and other influences, it would be difficult to draw any satisfactory conclusions. I have found too in normal cases—all in fact in which I examined carefully—that the rate of progress seemed more rapid as the mark neared the free edge, and this is not easily accounted for.

Effect of weather, temperature, local applications, special dyscrasiæ, &c.—Of these points I have no records, but it has seemed to me that the marks appear more readily in gouty subjects than in others.

How far is the appearance general on all the finger-nails?—This does not seem absolute, but generally all the nails are affected. Where there has been any difference between the two hands, the right has generally shown the furrows in preference to the left, but it has been more usual for both hands to show them. In some cases only special fingers have been affected, and speaking generally it may be said that the nails of the thumb and middle finger showed the marks more clearly than the others, and the ring finger least of all.

Do these marks appear without some discoverable local or general cause?—In only one or two cases out of about fifty could I not find sufficient cause, but it must be confessed that the knowledge of some previous illness has led me generally to search for these marks. However, on one occasion I examined the hands of a class (about twenty) of students in the out-patient room and found only two furrowed, and in each there was a history of some previous general illness, scarlatina in one case and measles in the other. But on other occasions I have found slight furrows without obvious cause.

General causes.—These may have been severe, as acute attacks of febrile diseases (scarlatina, measles, erysipelas, &c.) or slight attacks of the same general affections, but it is not uncommon to find the marks after what appear to be very slight ailments. In one patient they appeared to correspond with occasional very severe headaches of a lithæmic or gouty character, and here there was a marked hereditary tendency to headaches. Dr. Langdon Down also mentioned the occurrence of these marks in his own case after overwork, and I have found them on my own finger-nails after a sharp attack of cold which disabled me. Dr. Wilks's case too showed a definite correspondence with two periods of seasickness.

Local causes.—In one case, where the left hand was injured by the blow of a rocket-stick which fractured the metacarpal bone of the index finger, and the arm and hand remained

in a splint for a month, the finger-nails of the injured hand alone showed the transverse furrows, but the marks were found in all the fingers. My notes of this case do not make mention of any special excess or deficiency of the marks on particular fingers but only that all were affected, and I am therefore inclined to presume they were equally so. In another case there seemed to be the only probable cause found in rather forcible pushing back of overhanging skin from the "quick."

Probability of these furrows appearing in any case.—I do not remember being deceived in my anticipation of finding these marks after any acute febrile attack or any illness which might be expected to interfere with general nutrition. My experience of this appearance after local injury is limited to the case above narrated, but I should expect to find them after most local injuries, especially those which have been attended with nervous or vascular damage either at the time or by subsequent inflammation. I have not found them on the hands after childbirth nor should I expect to.

Occurrence on the toe-nails.—Of this I have no records, but I should expect to find them. However, they would not be so available for observation.

Suggested value of these marks.

Their occurrence and continuance within sight for from four, five to six months after an illness may sometimes be of value in proving that such an illness or interference with nutrition has taken place, but whether one will be able to indicate the severity of a recent illness by the depth or general distribution of the marks on many finger-nails may be worthy of inquiry. It may, however, be taken as of some value in proving or disbelieving the story of illnesses occurring within a certain time when there is occasion to doubt the patient. As nail-marks they can be used for the purpose of identification, but in this respect they are of course not peculiar. That they will indicate the rate of growth in the nail is probable, and this will I think be found to differ considerably in different individuals and vary with season,

weather, and other circumstances. Permanent interference with the growth and character of the nails in certain constitutional diseases like congenital syphilis has already been pointed out by Mr. Jonathan Hutchinson, but in these temporary marks and defects there seem to be a means of noticing the influence of passing interferences with nutrition. There are some other questions which arise on considering the subject. How early in life are the nails liable to have these furrows? As these furrows move towards the free edge, it is interesting to inquire how deep the moving part extends. It is apparently the only place where movement by new deposit or growth extends along the surface and is not terminal,—but that it is developmentally terminal is seen by the growth of the claws, their homologues in claw-bearing animals. Surface scars are said to alter their position by time, but this is evidently not an allied process. The moving forward of the nail towards the free edge involves, too, the periodical removal in unused or slightly used hands by paring, but where there is rough work, as among gardeners, I find that certain finger-nails, especially the thumb, are never pared, and so the wearing down process resembles what is found in animals. As the nail-marks move forward to what extent does the side overhanging skin also move forward towards the tip of the finger? Many of these questions could be examined into and noted by periodical photographing of the fingers, and this is an easy process in the present day.

APPENDIX.

By WILLIAM ANDERSON, F.R.C.S.

I venture to add, with the permission of the author, a brief note founded upon a personal experience of my own. In June, 1888, I was attacked by erysipelas of the face and head, and for ten days suffered from pyrexia, diarrhoea, vomiting, jaundice, and insomnia, being unable to retain food, or to obtain more than an hour's sleep daily during an entire week. After passing through a rapid convalescence, I began to watch the growth of my finger-nails. About three weeks after the cure of the disease I observed a transverse furrow rising above the cutaneous fold concealing the root; it was distinctly marked in all the digits, but most characteristic upon the thumb; the groove was deepest

in the middle, gradually becoming more shallow as it approached the borders of the nail, and it was unassociated with any dotting of the horny tissue. At the end of three months the furrow had reached the mid point between the root and the free border, and a little before the close of the sixth month it had reached the point at which its sacrifice to the scissors became necessary. No observations were made upon the toe-nails. The hair of the head, eyebrows, and eyelashes began to fall out in large quantities immediately after recovery, and continued to do so for about two months, when the loss suddenly ceased, and a short, but strong new growth was perceptible. How far this shedding of hair may have been due to the local condition of the scalp, and how far it may have been attributable to the general impairment of the nutritive functions, it is not easy to say.

