THE BRITISH JOURNAL OF DERMATOLOGY.

JUNE, 1910.

TWO CASES OF MOLLUSCUM CONTAGIOSUM.

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MOLLUSCUM contagiosum is a comparatively rare disease, especially in adults, and the two following private cases which have occurred recently in my practice may be considered of sufficient interest for record in the Journal.

The first occurred in a lady of good position, aged 54 years, who visited me in November of last year. She had been for many years a sufferer from rheumatism, and for two years previously had been ordered frequently repeated Turkish baths, which she obtained almost exclusively in one establishment at a seaside resort; she had been usually "rubbed" by the same masseuse, the wife of the proprietor; the latter was a pigeon fancier and was a great breeder of these birds. He, however, denied any illness among the birds, and, perhaps naturally, repudiated any suggestion that *his* baths had been the source of infection in the case. The last bath had been taken some four months before the appearance of the eruption, which had been noted for eight weeks before she appealed to me for advice. When she came under observation there were very numerous typical molluscum tumours, some sixty in all, distributed irregularly over the trunk, both back and front, and not occurring on any other part of the body. They caused little or no inconvenience, with the exception of one lesion which had become slightly inflamed, probably from pressure of the corsets, the patient being of very full habit and

lacing rather tightly. The face, the neck, the scalp, the hands and the genitals, parts most commonly affected, were in this case absolutely free. The tumours varied in size from that of a pin-head to that of a small bean or pea; in a few positions, *e.g.* over the shoulders, there were small groups of lesions—five or six juxtaposed tumours apparently the result of infection by contiguity. The husband, who, however, was not examined by me, appeared to have escaped contagion; and no other cases occurring in the clients of the Turkish bath chiefly implicated could be traced.

The second case occurred a few weeks later, also in a lady, aged 40 years, the wife of a staff-officer in the Army. She, like the previous case, had had a course of Turkish baths in London, the last bath having been given on September 11th, 1909. A “wart” appeared on one of the fingers about the end of September, and was excised on October 7th by her family medical man. Some ten days later she began to note small tumours on the body, which were mistaken for warts on the supposition of infection from the wart on the finger, and no attention was paid to them until some of them began to bleed, when she finally was sent to me.

When seen by me she had very numerous typical molluscum tumours scattered over the trunk, both back and front, and nowhere else, the face, neck, scalp, limbs and genitals being completely free of disease. There were about fifty lesions in various stages of development, some quite rudimentary, others as large as a pea, and a few of these latter were suppurating. Her husband, whom I inspected later, appeared to have escaped contagion. She has no children. The only pet kept before the eruption appeared was a dog, which has since been carefully examined by a veterinary surgeon, who pronounces the animal to be perfectly free of disease.

The treatment adopted in both cases was the same. The individual tumours were incised, their contents squeezed out under aseptic precautions with forceps, the cavity swabbed out with a sharpened wooden match-end dipped in pure carbolic acid, and dressed with gauze wet with collodion. In the first case, which was dismissed three months ago, there has been no recurrence. The second case is too recent for any such statement to be made.

It will be noted that in both cases the distribution was entirely similar, and the number of lesions very unusual; in both cases the

interval between the appearance of the eruption and the last probable source of infection was considerable. It is to be noted also that the style of the Turkish bath frequented by both ladies was irreproachable as far as expensiveness could procure such a condition.

Radcliffe-Crocker,* in his third edition of his text-book, in a footnote records three similar cases occurring in his practice, all in persons in whom the infection could be attributed to Turkish baths, and quotes Hutchinson's similar experience. Knowles† describes an epidemic of *Molluscum contagiosum* occurring in an institution for children, 59 cases of the disease having been noted out of a total of 350 children. The largest number of lesions present in any individual case of this series was twelve, and the face was much the commonest site for the eruption, this being the seat of the disease in thirty-eight out of fifty-nine cases. The incubation period, *i.e.* the time elapsing between possible sources of infection and the appearance of the eruption, varied within wide limits—from a few weeks to many months. In experimental inoculations the same variability was noted: in a case of Juliusberg's it was fifty days; in a case of Serra's it was ninety days. The virus is demonstrably capable of filtration through a Berkfeld filter, the filtrate being bacteriologically sterile, yet able to produce the disease. This filtrate has been examined in the fresh state by Casagrandi,‡ who found small masses with oscillatory movement, granular in constitution when stained. Giemsa's solution, very weak, and allowed to act only for ten to thirty minutes, produced three different staining effects, of which an element taking a red stain seems to be a young form, which changes in structure when older. Pick§ appears to have found, with a dark-stage microscope, that the corpuscles which are characteristic of *Molluscum contagiosum* have amœboid prolongations, and contain mobile elements which stain like cocci. He concludes that the corpuscles are phagocytic.

It is noteworthy that in Japan, according to Sakurane,|| cures of *Molluscum contagiosum* seem to be effected by *internal* treatment

* *Diseases of the Skin*, third edition, vol. ii, 1903, p. 677.

† *Journ. Amer. Med. Assoc.*, August 28th, 1909.

‡ *Ann. de Derm. et Syph.*, abstract, 1908, p. 455.

§ *Ibid.*, 1907, p. 147.

|| *Ibid.*, 1907, p. 730.

only, a decoction of seeds of a certain grain apparently bringing about cure in periods varying from a week to two months.

The incidence of *Molluscum contagiosum* seems to vary curiously with locality. I owe to Dr. Arthur Hall, of Sheffield, the appended statistical details of the proportion of cases of *Molluscum contagiosum* compared with general diseases of the skin, in several important provincial cities. Dr. Hall, in the covering letter which accompanies the statistics, which are appended, writes as follows :

“In the year 1904 a case of generalised *Molluscum contagiosum* of the trunk presented itself at my out-patient skin clinic at the Royal Hospital, and I was reminded thereby that I had not seen a single case of this affection during the fourteen years I had been on the Hospital staff, either in hospital or private practice. Remembering the very considerable number of cases I saw in London during my student days, this complete absence of cases here seemed curious, and I made inquiries of my colleagues here, both ophthalmic surgeons and others, on the point, but found that their experience coincided with mine, namely, that the disease was non-existent in Sheffield and district.

“This was further supported by the fact that the man suffering from *Molluscum contagiosum* spoken of above was not a resident, but belonged to Manchester, and in his work as railway guard was only in Sheffield for an occasional night.

“This led me to make inquiries from various leading dermatologists, ophthalmic surgeons, and others having opportunities of seeing such cases, in most of the larger centres in the United Kingdom, to ascertain whether the distribution of *Molluscum contagiosum* was widespread or limited to certain districts. I did not include London in this inquiry, as I knew the disease was well known and regularly seen there.

“I had hoped to complete these inquiries, but for various reasons they were put aside from time to time, and as they are of considerable interest I shall be pleased for you to make use of them.

“I should like to take this opportunity through you of expressing my thanks to all those who so kindly troubled to answer my questions, in many cases at considerable length. To some of them it is now, alas ! too late to return thanks, for they are no longer with us.”

Dr. Hall wishes me to emphasise that the information he has thus obtained was given in the form of a letter, and is often merely a general expression of opinion.

Manchester (Dr. H. G. Brooke): "Amongst 17,238 cases of skin-disease attending between the years 1901 and 1904 there were seven cases of *Molluscum contagiosum*, occurring as follows: Two in 1901, five in 1904." He believes that it was more common ten to fifteen years ago.

Liverpool (Dr. Leslie Roberts): "It is quite rare. Seen occasionally in children, but much more rarely than in London."

Leeds (Dr. Barrs): "I have only seen one genuine case."

Newcastle (the late Dr. Limont): "In the Skin-Department of the Royal Infirmary the following cases are recorded:

"In 1900	.	1 case in 1156 cases
„ 1901	.	4 cases „ 1257 „
„ 1902	.	3 „ „ 1493 „
„ 1903	.	0 „ „ 1751 „
„ 1904	.	0 „ „ 1813 „

Total	.	8 „ „ 7470 „	about 1 per cent.
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"All these cases were in children, except one in which the mother of one of them was affected on the breasts."

Hull (the late Dr. Elliott): "In many years' hospital experience I only remember seeing one case; in private, none."

Nottingham (the late Dr. W. B. Ransom): "I have never heard of a case in this district."

Lincoln (Dr. Mansel Sympton): "I do not remember having seen a case of this complaint since leaving St. Bartholomew's Hospital in 1888."

Shrewsbury (Dr. H. W. Gardner): "I have inquired amongst our infirmary staff and from our House surgeons, and apparently *Molluscum contagiosum* is unknown here."

Cambridge (Dr. L. Humphrey): "I have only seen one case here, in a young person."

Oxford (Dr. Collier): "Very rarely indeed."

Birmingham (Dr. E. Gilbert Smith): "It occurs rarely, about one or two cases a year, both in hospital and private practice. It is seen about equally in children and adults. I find it follows, in moist

skins, Turkish baths, where towels are never washed, but simply wrung out and dried before use. At least that is one cause amongst private patients."

Bristol (Dr. Harrison): "Out of 19,182 skin cases at the General Hospital from January, 1885, to September, 1904, I have records of sixteen cases, or about '0834 per cent. only. But the incidence of these is so peculiar that one may very properly divide the period into three stages. Thus between 1885 and 1892 I had fourteen cases—six males and eight females—their ages varying from three to thirty years. During the years 1893 to 1896 inclusive, no cases. In 1897, one case in a male, aged 16 years. From 1898 to 1902 inclusive, no cases. In 1903, one case, male, aged 1 year, and there was said to be another case in a child, which never turned up. Some of the cases occurred in the same family, but as regards general contagiousness, the evidence is very slight; not as much as psoriasis, probably. I was in very active practice at Walsall, in Staffordshire, for thirteen years before I came here in 1877, and during that period saw very few cases of the complaint, whilst in London, both hospital and dispensary practice, I had seen several cases."

Portsmouth (Dr. Claremont): "It occurs, but is uncommon. Chiefly in children."

Plymouth (Dr. Russel Rendle): "It is seen occasionally. I have only seen one or two cases, I think in children."

SCOTLAND.

Edinburgh (Dr. Norman Walker): "It is moderately common. One or two cases a year in about 1600 new cases. Chiefly in hospital practice, more in children than adults. Many blame the public baths for its occurrence."

Glasgow (the late Sir T. McCall Anderson): "It is not rare. It is seen more frequently in hospital than private practice, and generally in ophthalmic institutions owing to its tendency to develop around the eyes. It affects children more than adults."

Aberdeen (Dr. Christie): "It is fairly common. We see three or four cases a year out of about 500 new cases of skin-disease. It is chiefly seen here on young adults and mostly among the girls working amongst fish. Dr. Christie adds: In my student days here, Dr.

Gardner, my predecessor, had always cases of *Molluscum contagiosum* to show us. The disease was then 'endemic' in one of the reformatory schools here. If I remember correctly, Galloway mentions this fact in his article in *Allbutt's System*. Nowadays we see it occasionally, and I am sure I am right in saying that it almost always occurs on the arms of girls who work amongst fish. I have occasionally seen it in private; the last case on the armpit of a young man, a coal merchant. How it got there I cannot tell."

IRELAND.

Dublin (Dr. William Beatty): "In ten years, from 1887 to 1897, in the Adelaide Hospital, out of 4505 skin cases I had fifteen of *Molluscum contagiosum*, *i. e.* about 0.33 per cent. I have met with five cases outside hospital; two were in teachers whose duties kept them in contact with the lower classes, one a girl from a charity school, one a doctor, and one a medical student suffering from secondary syphilis. It is more common in children than adults."

Belfast (Dr. Pardon): "It is rare. During the last two years I have seen two cases at hospital, both children, and two in private practice. I should say about one case in 1000 skin cases."

Summarised, we get as follows:

ENGLAND.

Occurs fairly regularly in Manchester, Newcastle, Liverpool, Birmingham, Bristol.

More rarely in Portsmouth, Plymouth.

Practically unknown in Leeds, Sheffield, Hull, Nottingham, Lincoln, Shrewsbury, Oxford, Cambridge.

SCOTLAND.

Occurs frequently in Edinburgh, Glasgow, Aberdeen.

IRELAND.

Occurs frequently in Dublin, Belfast (less so).

It is interesting to note that with the exception of Manchester and Birmingham, all the places in which it occurs at all regularly are

seaports, whilst, with the exception of Hull, all the places where it is practically unknown are inland.

Manchester, too, of recent years has become a seaport.

Dr. Christie's remarks as to the fish dressers is interesting in this connection, and it might be worth some further inquiry at seaports dealing particularly with the fishing trade, such as Grimsby, Yarmouth, etc.

P.S.—(1910) I may add that during the last two years, three or four cases have been seen here in children.

Statistics of Comparative Frequency of Molluscum Contagiosum from Various Sources.

Places (in order of frequency).	Source of information.	Total cases of skin-disease.	Total cases of Molluscum contagiosum.	Per cent.
Dublin . .	Beatty (private communication)	4,505	15	0·33
London . .	Crocker (text-book)	15,000	32	0·21
New York . .	Bulkeley (text-book)	20,000	20	0·1
Newcastle . .	Limont (private communication)	7,470	8	0·1
Manchester . .	Brooke "	17,238	14	0·083
Bristol . .	Harrison "	19,182	14	0·077
Glasgow . .	Anderson (text-book)	11,000	7	0·06
		84,395	110	

Average percentage in 84,395 cases of skin-disease = 0·13.

In comparison with these provincial figures, all of which I owe to Dr. Hall, the incidence in London seemed an interesting fact to determine. With this object I approached the teachers of dermatology in the Metropolitan medical schools, and tabulated my own cases at St. Mary's Hospital, with the following results:

St. Mary's Hospital.—Cases tabulated since April 6th, 1903. In 11,500 cases of general skin-diseases (recorded as new cases only), Molluscum contagiosum occurred fourteen times, namely, as follows:

Female, aged 24 years; female, aged 2½ years; female, aged 5 years; female, aged 16 years; female, aged 20 years; female, aged 21 years; female, aged 53 years; female, aged 60 years; female, aged 47 years; female, aged 2 years; male, aged 2¾ years; male, aged 7½ years; male, aged 38 years; male, aged 3 years.

It will be seen that there was a considerable preponderance of females over males, and that the cases under puberty were less numerous than in those above that age (six against fourteen).

It must be understood that in every case in which the diagnosis was definitely made (and only those cases are included here), microscopical examination of the squeezed-out molluscum bodies confirmed the diagnosis. It is more difficult to tabulate private cases, but I should say the incidence was on the whole smaller than in the hospital series. I have not included in these figures any of my cases seen in my department at the Children's Hospital, Shadwell, where the proportion would probably be greater than in a mixed clinique.

It is noteworthy that in not a single instance was any history of infection made out, although the question was carefully inquired into and even pressed. In none of the cases was there anything approaching the severity or extent of the lesions noted in the two private cases recorded above, the number being restricted to, at most, ten lesions in any individual case.

Tumours were excised in one case and examined histologically, and revealed the characteristic and well-known appearances, which it is not necessary to detail here.

I append some expressions of opinion and some statistics, which have been kindly furnished me by friends and colleagues at some of the medical schools.

Dr. Colcott Fox writes: "I think it is much less common than formerly. In my experience it is comparatively rare in the out-patient skin-department at Westminster Hospital, but was not of every-day occurrence at the Paddington Green Children's Hospital. I have seen twenty or thirty cases in children sent into the Metropolitan Asylums' Board Schools with ringworm, which shows it must be spread about in poor-law institutions."

Dr. Pringle writes: "I see only selected cases which are passed by other officers (at the Middlesex Hospital). Both the casualty, medical, and surgical officers would recognise and treat such cases as casualties. I am pretty certain most cases are to be found in the children's department. When I was at Moorfields in 1881-1882 cases were common."

Dr. J. M. H. MacLeod writes: "In the out-patient department at Charing Cross Hospital during ten years there have been six cases

of Molluscum contagiosum out of 6712 patients. At the Victoria Hospital during four years (1903-1906) I had only two cases out of 3563 cases, all in children." It will be noted that in the first figure given, representing cases at Charing Cross Hospital, the proportion is almost exactly the same as in my own experience at St. Mary's.

Dr. Radcliffe-Crocker, in his text-book (third edition), gave an analysis of 10,000 hospital cases (at University College Hospital), in which Molluscum contagiosum occurred twenty times—2 per 1000—and 5000 private cases in which it was noted twelve times—a much larger proportion in both series than my own later experience would confirm. The disease would appear to be becoming rarer, as noted by Dr. Fox.

Dr. Edward Stainer has kindly given me the following figures of the cases in his department at St. Thomas' Hospital, which includes a special children's skin-department as well as the general adults; he found eighteen cases of Molluscum contagiosum in 13,618 cases of general skin-diseases (1·3 per 1000).

Dr. Sequeira has kindly examined records of 1000 consecutive cases of skin-disease at the London Hospital, and reports four cases of Molluscum contagiosum in this number.

Dr. Whitfield has allowed me to inspect some records at the Great Northern Hospital which have been somewhat scantily kept, but from which the proportion appears to be 6 cases of Molluscum contagiosum in 5644 cases of general skin-disease (1·06 per 1000), the following being the incidence of sex and age:

Male, aged 30 years; male, aged 6 years; male, aged 41 years; male, aged 2 years. Female, aged 3 years; female, aged 7 years.

It will be seen from the London statistics that I have been able to compare that the proportion of cases from contemporaneous and similar records (St. Mary's, St. Thomas's, Charing Cross, and Great Northern) is curiously constant (1-1·2 per mil.). In Dr. Crocker's statistics, which somewhat antedate these, the proportion is larger (2 per mil.). A possible explanation of the larger percentage may be that Dr. Crocker certainly included in these figures cases seen at the East London Hospital for Children, and this inclusion raises the percentage, as I can testify from a personal acquaintance of fifteen years with the same institution. Or it may be explained by the suggestion made by Dr. Colcott Fox, that the disease is becoming more rare.

In Dr. Sequeira's series alone is there any large disproportion, and it is probable that at the London Hospital, which draws its cases chiefly from the East End, the ratio is much higher; no doubt also the smaller number of cases compared in his figures allows of fallacy.

It only remains for me to thank those colleagues and friends who have so kindly supplied me with statistics, and notably, Dr. Arthur Hall, who in the most generous way has placed at my disposal the carefully compiled figures which he had himself intended to publish.

THE FUNCTIONS OF THE SKIN.

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LECTURE II.

IN the first lecture the pigment of the skin was considered briefly in relation to the structure of the skin. It is necessary now to trace as far as possible its origin and to discuss its functions.

The pigment of the skin and hair is known as *melanin*, but the use of this term does not imply that all the pigments are of the same chemical composition. The colour may vary from a more or less dark brown to black; the granules are amorphous, insoluble in water, alcohol, ether, and acids, but soluble in caustic soda. The melanins contain carbon, hydrogen, nitrogen, and oxygen, and in some specimens sulphur; as a rule they possess more carbon but less nitrogen and hydrogen than the proteins. The proportion of sulphur varies; thus in some forms it is very high, in others it is absent.

There is considerable doubt about the purity of the pigments examined by different observers; the granules may have a colourless ground substance, which is stained by the true pigment, and for this reason a solution of the granules may contain substances in addition to the pigment. The black pigment-granules in the hair of the horse's tail can be prepared by treating with concentrated hydrochloric acid for nine or ten weeks at the ordinary temperature of a room. From these granules two substances can be separated—melanic acid and oxy-melanic acid, $C_{52}H_{30}N_{10}O_7$ and $C_{18}H_{11}N_5O_{10}$; they are free from sulphur, and in this respect