

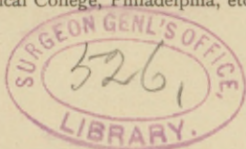
STELWAGON (H.W.)

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Molluscum Contagiosum

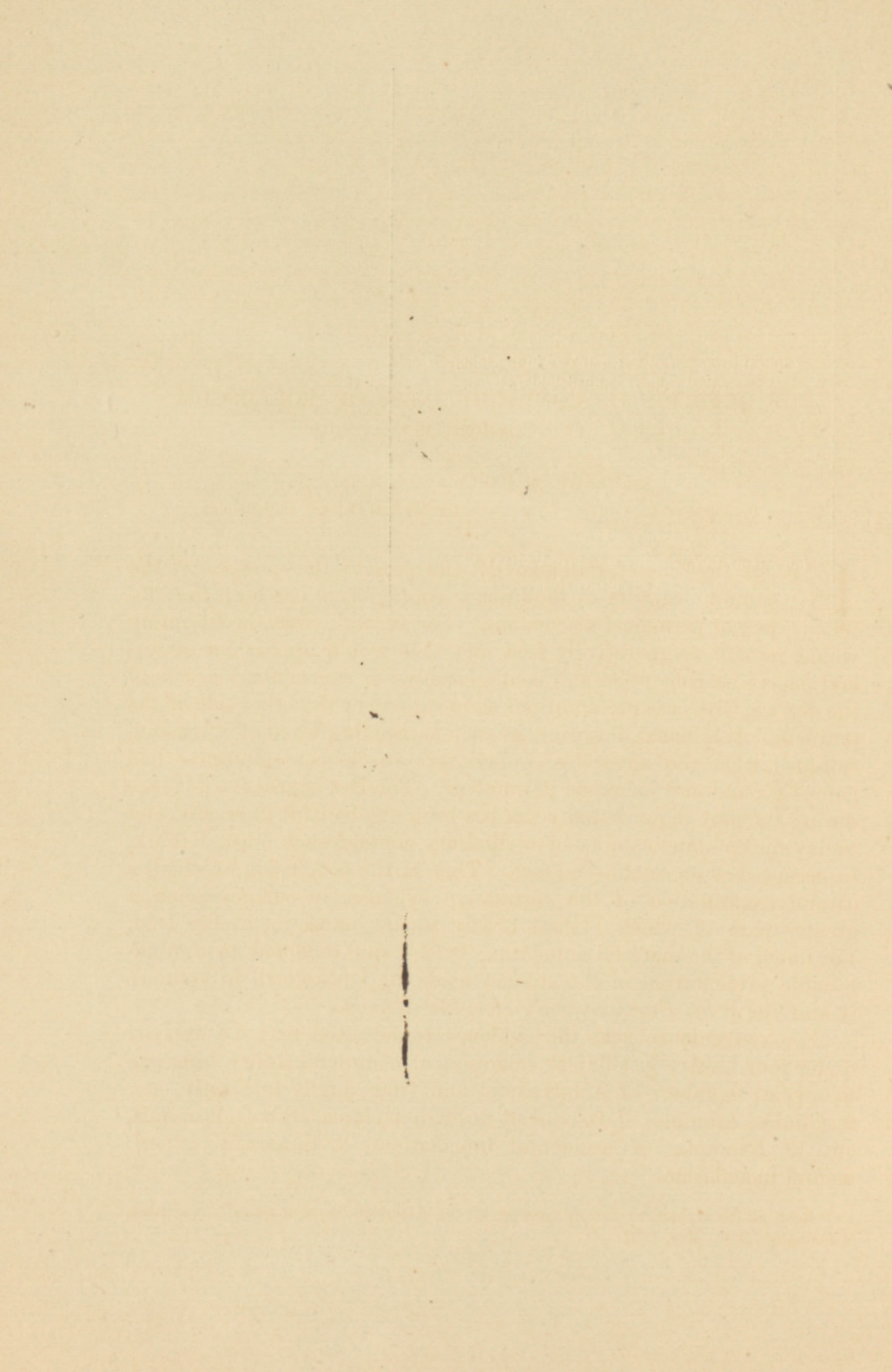
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REPRINTED FROM THE
JOURNAL OF CUTANEOUS AND GENITO-URINARY DISEASES
FOR FEBRUARY, 1895



THE QUESTION OF CONTAGIOUSNESS OF MOLLUSCUM
CONTAGIOSUM.*

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FROM the time of Bateman till the present the question of the communicability of molluscum contagiosum has been the subject of periodical discussions. For several years the literature would remain comparatively free, and then would appear one or several papers bearing upon the contagiousness or non-contagiousness of the disease, with case presentations showing one or the other side of the problem. It is noted, however, as each succeeding wave of discussion subsided, that the advocates or believers in its contagiousness had gained ground and increased in numbers. The last aggressive advance during the past eight or ten years has been one fruitful in results, and to-day the communicability of molluscum contagiosum must, I think, be accepted as an established fact. That is the conclusion to which a careful examination of the affirmative evidence in our possession, a greater part of which I shall briefly review, must inevitably lead. For much of the material antedating 1872 I am indebted to that admirable presentation of the subject made by Duckworth in volumes iv and viii of *St. Bartholomew's Hospital Reports*.

For convenience' sake the evidence to be cited may be arrayed under four heads: 1. Clinical examples of communicability from one to several members of a household and from family to family, etc. 2. Clinical examples of its spread through asylums, schools, hospitals, etc. 3. Examples of accidental inoculation. 4. Successful experimental inoculation.

* Read at the eighteenth annual meeting of the American Dermatological Association, Washington, D. C., May, 1894.



Negative evidence, such as the occurrence of the disease in isolated cases and the failure in most instances of the attempts to produce the disease by inoculation, which has often been advanced as militating against the contagious view, has, in my judgment, no weight whatsoever as against the positive facts pointing unmistakably to the contrary. That contagion is difficult to trace in such instances does not admit of question; but in a disease in which the contagious principle, the means and method of contagion are as yet not positively known, this is not to be wondered at. Moreover, even in such actively contagious diseases as ringworm the source of the affection can not always be ascertained; and in some instances, too, even of this disease, single cases in a family will exist without the others becoming affected. If in such an actively contagious disease this may occur, it certainly can not be surprising for the same to happen, even more frequently, with a disease less actively contagious. As to the inoculability of the disease, one success will weigh against hundreds of failures; other diseases admittedly contagious are often difficult to inoculate experimentally, and in a given number of attempts the successes will be found to be relatively small as compared to the failures. With these preliminary remarks the subject may be considered under the several headings referred to.

1. CLINICAL EXAMPLES OF COMMUNICABILITY FROM ONE TO SEVERAL MEMBERS OF A HOUSEHOLD AND FROM FAMILY TO FAMILY, ETC.

Bateman's Cases (Delineations of Cutaneous Diseases, London, 1817).—(a) A young woman whose face and neck were disfigured by numerous mollusca had received the eruption from a child which she nursed, on whose cheek a large lesion of the same disease existed and who had doubtless been infected by a former nurse on whose face the same eruption had been observed and who had also communicated it to two other children in the family. (b) Another instance where a child was infected by an older child who was in the habit of nursing and fondling it and on whose face the disease had previously appeared.

Thomson's Cases (quoted by Paterson, *Edinburgh Medical and Surgical Journal*, 1841, vol. lvi, p. 280).—(a) In one family the eldest boy was affected first and was supposed to have caught it from a play-fellow; a younger sister and infant brother subsequently contracted it (b) In another instance the child of a farmer presented the disease, presumably caught from a child of one of the farm servants; the

nurse of the child became affected on the neck in the region where the infant usually laid its head.

Henderson's Cases (*Edinburgh Medical and Surgical Journal*, 1841, vol. lvi, p. 213).—Four cases—three in one family, one after the other, presented the disease; the fourth case was the child of a neighbor in the habit of playing with the others.

Paterson's Cases (*Edinburgh Medical and Surgical Journal*, 1841, vol. lvi, p. 279).—(a) A child of a Newhaven fishwife presented lesions about the mouth and nose; the mother who suckled it became the subject of the disease, which was confined to the areolar region of the mamillary gland. (b) In another instance a child was affected on the neck and shoulders, and the disease was believed to have been caught from a girl who had previously carried it about and who was the subject of similar cutaneous tumors. (c) In another instance, a man and his wife had the eruption about the genitalia.

Cotton's Cases (*Edinburgh Medical and Surgical Journal*, 1848, vol. lxi, p. 82).—A girl aged fourteen had the disease on the hands and arms; next an infant sister, six months old, suffered on the arms, chest, and thighs; and three months subsequently another sister presented lesions on the head.

Caillaud's Cases (*Traité pratique des maladies de la peau chez les enfants*, 1859, p. 54).—A youth presented with the disease upon the face of more than six months' duration; his sister, aged fourteen, had, for a somewhat shorter period, numerous tumors on the neck and face; they both used the same towel.

Hardy's Cases (*Leçons sur les maladies de la peau*, 1863, p. 98).—(a) A nurse had four or five mollusca on her breast; the child suckled by her had similar tumors on the parts of the face which came in contact with the diseased breast. (b) In another instance a nurse having charge of a patient who had molluscum tumors, developed on the backs of the hands, and subsequently on the body, similar growths; her companion, a woman who lived in the same room with her, and whose hair she often combed, subsequently caught the disease, presenting lesions on neck and hands.

Erasmus Wilson's Cases (*Diseases of the Skin*, fifth edition, 1863, p. 653).—A girl, aged four, presented fifteen to twenty tumors; next an infant sister and another sister, aged six, contracted the disease; the mother also had several lesions on the neck, and the remains of some on the face.

Neligan's Cases (*Practical Treatise on Diseases of the Skin*, 1866, p. 305, Dublin).—Two instances in which the disease was communicated by children to adults, in each instance members of the same family.

Duckworth's Cases (St. Bartholomew's Hospital Reports, vol. iv, 1868, and vol. viii, 1872).—There were several series: (a) The disease was first noticed in an infant, from whom it spread to two or three brothers and sisters of varying ages up to nine years. It then spread to another child, a girl, aged nine, living in the same house; then to her infant sister; and later to a brother, aged six. The latter infant was often left with a neighboring family, and played with a three-year-old child, who some time afterward developed several tumors; another child in the same house (lodging house) also presented with numerous mollusca on the chin and neck. (b) A girl, aged eight, presented several mollusca about the upper face which had existed seven months; a younger sister had two lesions on the face which came some months after the disease developed in the first case, and recently a tumor appeared on the baby, aged five months, who was often nursed and kissed by these children. (c) A girl, aged nine, had tumors about her mouth a month before her next younger sister had them on the eyelids; four or five months subsequently several mollusca appeared on the baby's face. (d) A boy, aged two, with numerous tumors on the face and neck, which had existed for nine months; a sister, aged sixteen, had a similar lesion on the eyelid twelve months before, and her next brother one on his forehead a month after hers was observed. (e) A woman with mollusca upon the face and mammae; the infant which she carried and suckled had likewise mollusca upon the face and neck; her eldest boy, aged three, had these growths for many months before the others became affected; finally, the grandmother who lived with them presented the disease. (f) A girl, aged fifteen, with several mollusca on the face; she had had crops of the tumors for two years, and her sister believed that she caught them from an infant nephew (son of this sister) who lived in the house. A younger sister, aged thirteen, had lately become affected; she sleeps with the first case. (g) A girl, aged five, with a number of mollusca on the neck, face, and front of the thorax; she had had them for twelve months; the baby, aged three months, had a tumor near the right outer canthus. These two children slept together. (h) A girl, aged seven, presented the disease; her younger sister, aged five years and a half, contracted the disease, showing several lesions on the face and finger; these two children slept together. A still younger sister, aged twenty months, also had mollusca around the eyes and on the finger. (i) A boy, aged three years and a half, with several lesions on the face and one on the thigh; a brother, aged seven, also had two mollusca on his face. (j) A patient, aged two, presented a number of tumors on the face and arms; the baby, aged eleven months, had one tumor.

Liveing's Cases (*British Medical Journal*, January 6, 1872, p. 11).—Two members of a family first came under his notice; during the period of observation and treatment, three of the other children of the same family, one sister and two brothers, all under twelve years, became affected.

Eames's Cases (*British Medical Journal*, December 21, 1872, p. 680).—A boy, aged nearly three years, was first affected; then the sister, aged fourteen; next the mother, and lastly another sister, aged eight. The children all slept in the same bed. The mother believed that the first child affected—thirteen months before—caught it from a woman who then lived with them, and had such spots on the face and hands.

Ferrier's Cases (*British Medical Journal*, December 21, 1872, p. 682).—A baby, aged nine months, with numerous growths on the lips, cheeks, and neck of five months' duration; the mother had two lesions on the left breast, which, as far as could be learned, came after those on the child's face had appeared. The disease was attributed to contagion from a little girl, the daughter of a neighbor, who had "warts" on the face and different parts of the body, and who used to frequent the house and kiss the baby.

Squire's Cases (*British Medical Journal*, January 13, 1872, p. 45).—Three cases occurring in the children of a family, and affecting all of them within a period of a few weeks.

Tilbury Fox's Cases (discussion, *British Medical Journal*, May 28, 1872, p. 538).—(a) One instance in which the mother's breast became affected with the disease while suckling her child who had some lesions on the forehead. (b) In another instance seven cases—seven children—in one family had been brought to him suffering from the affection.

Abelin's Cases (quoted by Retzius, *Deutsche Klinik*, 1872, p. 39).—(a) A girl, aged three, with lesions upon the face; another girl, about the same age, and with whom she played, soon developed the disease. (b) Another group of cases consisted of three children and their father.

Kaposi's Cases (*Vierteljahresschrift für Dermatologie und Syphilis*, 1877, p. 352).—Two of his own children; in the first child the tumors appeared after an attack of eczema, numerous lesions presenting; a few months after the growths had been removed, his four-year-old daughter developed the disease. His youngest child escaped.

G. H. Fox's Cases (*Chicago Medical Journal*, vol. xxxvi, 1878, p. 466).—(a) A girl, aged eight, with two lesions on the chin, who thinks she caught it from a little girl in the same house having five lesions, likewise on the chin. (b) Girl, aged four and a half, with several lesions near the eye, on the chin, cheek, and neck. Several months

before she had one near the right oral commissure; a sister, aged seven, had one at the same time in a similar location. (c) A boy, aged six months, with several lesions near the eye and on the scalp of two months' standing; a brother who had died a year before had the same disease; a little girl living in the same house has one lesion on the forehead. (d) A girl, aged six, with several tumors on the chin and the eyelid. Mother stated that she used to play with another girl who had "warts" on the hands; recently an older sister, aged fourteen, had four or five mollusca on the left cheek. (e) A girl, aged twelve, with several lesions on the chin and nose; a brother, aged seven, has one on the forehead; a child of a married sister had several around the eyes. This last child died seven or eight months before the others were affected. (f) A boy, aged seven, with one tumor on the nose of two months' standing; a little brother had some around the eyes about a year before; now a two-year-old baby has some "specks" under the eye. (g) A girl, aged one and a half, with numerous lesions on the face, chin, and neck; she lives next door to one of the other cases.

Smith's Cases (Dublin Journal of Medical Science, vol. lxvi, 1878, p. 371).—(a) A girl, aged two years and nine months, with lesions on the chin and one near the eye; a younger sister, aged sixteen months, soon afterward had two small tumors on the face and three on the chin; the father also contracted it, having several growths over the left eye. The disease could be traced to a boy of seventeen living in the same house. A little girl residing at that time in the same house had also a number of similar tumors. (b) A boy, aged two, with a dozen tumors on the neck; nine months later, a younger sister presented with similar growths.

Barnes's Cases (British Medical Journal, March 9, 1878, p. 335).—Had under his care an infant suckling aged eight months, the mother, the sister (aged seven), all of whom were affected with the disease. It first appeared in the girl, on her hands and face; she fondled and often cared for the baby, who caught it, by whom it was conveyed to the mother's breast; the father next caught it, having two tubercles under the left eye; and finally the brother contracted it, presumably from the baby.

Mackenzie's Cases (British Medical Journal, vol. i, 1879, p. 855).—(a) In the first series were a mother, four of her children, and an aunt. The disease began in her fourth child, by whom it was communicated to the baby's face; this latter conveyed it to the mother's breasts; the sixth child was next affected, and about the same time the fifth child also. The aunt, who frequently nursed and fondled the children,

caught it, having two lesions on her face. (b) Another group consisted of an infant, eighteen months old, with numerous lesions upon her face, and her mother with two mollusca on her breast. (c) In another instance two children living next door to each other presented the characteristic tubercles.

Morrant Baker's Cases (discussion, *British Medical Journal*, 1879, vol. i, p. 856).—Two or three instances in which the mother had molluscum contagiosum on the breast, and the child the same disease on the face.

Malcolm Morris's Cases (discussion, *British Medical Journal*, vol. i, 1879, p. 856).—A child with the disease, from whom an infant caught it, and by the latter communicated to its mother.

G. Brown's Cases (discussion, *British Medical Journal*, vol. i, 1879, p. 856).—Several instances, and in none was the infant affected without the mother's breast being also similarly diseased.

Allen's Cases (*Journal of Cutaneous and Genito-Urinary Diseases*, 1886, p. 239).—There came under his care a married woman, aged twenty-five, with a group of molluscum tumors on the right side of the neck, and a few scattered ones on the opposite side. They had first appeared seven months before, at a spot where her child (who had also had the disease) rested his face when she carried him. The child was examined and found to have still remaining upon his face a solitary molluscum. The mother stated that her small brother, who lived in the family, was similarly affected.

Havenith's Cases (*Journal de médecine de Bruxelles*, mars 5, 1887).—A woman with two lesions on the breast, and her infant, which she suckled, with a number of growths upon the face.

Tommasoli's Cases (*Monatshefte für praktische Dermatologie*, No. 4, 1890, p. 150).—(a) A four-year-old child passed some days with a family whose child, whom she was visiting, had some mollusca upon the face. After not less than twenty days she also showed mollusca upon the face. Some time after she had returned to her family from this visit her older brother contracted the disease. Before this visit neither had shown the slightest trace of the disease. (b) An infant had some tumors on its face; her mother, who was obliged to carry the child a great deal, also showed a lesion on one arm, and in the very place upon which the head of the child rested.

Mittendorf's Cases (*Transactions of the American Ophthalmological Society*, vol. 4, 1885–1887, p. 263).—Some of the children afflicted with molluscum contagiosum were taken from an institution where the disease was more or less epidemic (to be referred to later) and given out to a farmer, who boarded them. In a short time the affection had

spread to several of the children boarding at this farmer's place, to the child of the farmer, and likewise to his wife.

Stebwagon's—my own—Cases (Journal of Cutaneous and Genito-Urinary Diseases, 1889, p. 61).—The group consisted, according to the report then published, of three cases, all occurring in the same family. The affection first appeared in the daughter, a girl of twelve; shortly afterward the father of the girl developed a lesion on the neck, and about the same time the sister presented a characteristic tumor on the thigh. A few months subsequent to the published report, and about three or four months after the last of the three cases had been under notice, the mother presented herself with a typical lesion upon the eyelid.

Neumann's Cases (Archiv für Dermatologie und Syphilis, 1893, p. 980).—A group of cases consisting of a mother and twins—infants at the breast. The disease first began in one of the infants, who communicated it to the mother's breast, and by the latter was subsequently conveyed to the other child.

2. CLINICAL EXAMPLES OF ITS SPREAD IN ASYLUMS, SCHOOLS, HOSPITALS, ETC.

Caillaud's Cases (Traité pratique des maladies de la peau chez les enfants, Paris, 1859, p. 94).—A girl, aged eight, was admitted in the hospital ward with numerous tumors on face, eyelids, and shoulders. Out of thirty children in the same ward fourteen became finally affected. He watched the cases, and was able to affirm that no new examples from without entered the ward.

Ebert's Cases (Jahrbuch für Kinderheilkunde, vol. iii, 1870, p. 152).—A girl, aged fourteen, was admitted in the hospital with a number of tumors on the face. The disease spread to three children who occupied the nearest beds, and who came more particularly in contact with the patient and with each other.

Living's Cases (Lancet, vol. ii, 1878, p. 495).—The cases, nine in all, were observed in a school. Within a few months after the first case was noticed eight others had become affected.

Mittendorf's Cases (loc. cit.).—(a) One epidemic was observed at a "home for children." The disease was introduced by a little girl who had a few lesions on the eyelids, which were noticed by the attendant at the time of her admission. No attention was paid to the matter, but within a few weeks several of the other girls developed similar lesions. At the time of the professional visit to the institution, which was about three months after the admission of the original patient, it

was found that twenty-seven children were more or less disfigured by molluscum tumors. (b) Another epidemic, observed by this writer, occurred at a "nursery and child's hospital." Within two years after the first case had been observed forty-one of the children had become affected.

Allen's Cases (Journal of Cutaneous and Genito-Urinary Diseases, 1886, p. 239).—(a) A case of the disease was admitted into a children's asylum with a few lesions upon the face. In the course of a few months it was noted that many others of the children were affected. In all there were forty-two cases at the time of the professional visit. Under treatment these cases recovered; but on a subsequent visit, three months later, it was observed that in twelve of the cases the disease had recurred, and that there had developed five new cases—making a total, recurrences excepted, of forty-seven cases. (b) This same observer had under his care another epidemic (*New York Medical Record, August 3, 1889, p. 116*) in another children's asylum. A little girl was brought in with some characteristic tumors on her face; a boy with whom she caressed and played soon developed the growths, and from these two cases of the disease five others developed.

Stebwagon's—my own—Cases (Journal of Cutaneous and Genito-Urinary Diseases, 1889, p. 60).—(a) The first series, numbering four cases, came under notice at a children's hospital. The disease was first seen in one of the crippled inmates, and soon afterward three others among his fellows in the same ward were observed. (b) The second series occurred in a "home for children." There were thirteen cases in all, among about one hundred children. It had been introduced by one of the inmates and subsequently spread to the others. (c) The third series occurred also in the last-named institution about a year later, the former cases all having been cured. It consisted of twelve cases, and in this instance was apparently traceable to a recent admission of two cases.

Tommasoli's Cases (loc. cit.).—In one asylum in the city of Sienna were found fifty-six children with molluscum contagiosum; in three other asylums in the same city not a single case was discovered.

Jackson's Cases (Journal of Cutaneous and Genito-Urinary Diseases, 1891, p. 338).—A small epidemic was observed in a children's pavilion of a hospital. One week after the first case came under observation two more cases had developed; a week later another new case, and the following week two additional cases, making six in all. While the patients did not sleep in the same pavilion, they all played together.

Graham's Cases (Journal of Cutaneous and Genito-Urinary Diseases, 1892, p. 89).—In an "infant's home" a little girl was brought in who was noticed to have small mollusca on the face and neck. During the first three months the child was in the infirmary; she was then transferred with several others to one of the nurseries of the institution which accommodates about twenty children. Two months later four of the inmates of this nursery were found to be affected; of these one was brought over with the original patient from the infirmary. The growths were removed by the ordinary plans of treatment; but from that time till the present—in all a period of three or four years—the disease had existed in that nursery. At present there are three cases. In all, the observation covered fifteen cases. The disease has never extended beyond this one nursery; there is very little communication between the various nurseries.

3. EXAMPLES OF ACCIDENTAL INOCULATION.

Wigglesworth records (discussion, *Transactions of the American Dermatological Association, 1891, p. 63*) himself as an example of accidental inoculation, several lesions appearing on the hand and forearm a few weeks after he had squeezed out molluscum tumors in a case coming under his care.

Allen relates (*Transactions of the American Dermatological Association, 1891, p. 62*), (a) the case of a man who came to him with a little molluscum tumor on the thumb, with the statement that a few weeks before he had squeezed out, with the thumbs, similar small tumors around the eyelids of his own child.

(b) This same observer also records (*New York Medical Record, 1889, p. 117, August 3d*) the following: A New York physician came to him, knowing him to be interested in the subject, with a molluscum tumor on the fourth finger; this gentleman was an ophthalmic surgeon to one of the large asylums where molluscum contagiosum had been epidemic and had of late removed many such growths from the faces of his little patients.

(c) *Allen* himself has recently been, as he has kindly communicated to me by letter under date of April 12, 1894, the recipient of an accidental inoculation, as follows: "My experimental attempts I must look upon as failures, though I have since been the recipient of an accidental inoculation on the left forefinger just over the knuckle, resulting in two distinct growths. I had been treating several cases during the few months preceding, the last case two or three weeks before. After they were big enough to attract my attention (mere

specks) it took them six weeks to attain a size from which a clinical diagnosis could be made."

Brocq, in a letter under date of May 20, 1894, details an accidental inoculation of himself as follows: "I inoculated myself involuntarily with molluscum, with my nails, after having pressed out, with the nails of the two thumbs, the contents of a lesion of molluscum in a patient. Soon afterward I inadvertently scratched my face. About a month and a half later several lesions of molluscum developed in this region."

4. SUCCESSFUL EXPERIMENTAL INOCULATION.

Retzius (*Deutsche Klinik*, 1872, p. 39) reports a successful inoculation upon himself: A small quantity of the molluscum material was rubbed into a limited area of the upper breast, over which he fixed, by means of adhesive strips, a watch glass; this protecting cover was worn for a few weeks. Two months later nothing had developed, but between four and five months after the inoculation there gradually developed a pinhead-sized lesion. He watched it for three months, during which time it grew a trifle larger; it then gradually disappeared. It had all the clinical appearances of a small typical molluscum contagiosum tumor, and the various microscopic examinations of the pressed-out contents were corroborative.

Paterson states, in a letter to Dr. Duckworth (quoted in Duckworth's paper, *St. Bartholomew's Hospital Reports*, vol. viii, p. 64, 1872), that his later inoculations had succeeded, the conditions being that the contents of the tumors were inserted into the mouths of the follicles in a tender part of the skin, such as the angles of the mouth, axillæ, mammæ, etc.

Vidal records (*Le Progrès médical*, 1878, p. 478) the successful inoculation of the disease made by Dr. Pantry, one of his assistants, a positive result showing itself three months after the date of inoculation.*

Stanziale's experimental inoculations (*Giornale Internazionale delle Scienze Mediche*, 1890, p. 321) had one successful result. The

* The details not being given in this report and not being able to find any other record, I wrote Dr. Brocq as to his knowledge of the particulars, who kindly replied as follows: "A flattened pointed instrument was inserted into a lesion of molluscum and moved to and fro a few times. With this the upper third of the arm in the subject selected was punctured in four places quite near each other, to the depth of about a half millimetre. A small mark from these punctures remained, and three months later the lesions of molluscum were noticed. In the notes it is not stated whether the subject had had molluscum previously." It is doubtless this successful case (an infant's or child's arm), that is shown in model No. 515 in the Baretta Museum.

substance of the molluscum was rubbed into the sound skin of the inside of the forearm and arm of a woman aged twenty-six; three months later a hempseed-sized lesion had developed, which in the course of forty days more had grown to the size of a small pea.

Pick, of Prague, also succeeded (*Monatshefte für praktische Dermatologie*, vol. xv, 1892, p. 133; and *British Journal of Dermatology*, 1892, p. 233) in producing the disease by inoculation. The inoculations were made in a boy aged eleven and a girl aged nine; the region selected was the skin over Scarpa's triangle. After thoroughly asepticizing the part, twelve inoculations were made just within the epidermis, and the exact location marked by ringing with nitrate of silver. It was not until the tenth week that the lesions began to develop. The contents of the little tumors which developed showed under the microscope the characteristic molluscum corpuscles. At the end of the twelfth week the growths were excised, and were found to correspond microscopically to molluscum growths. Nine of the twelve inoculation succeeded.

Haab succeeded (*Correspondenzblatt für Aerzte*, No. 8, 1886) in inoculating himself. He rubbed the contents from a freshly extirpated lesion into the skin of his forearm. Nothing was noticed till more than six months had passed, when a characteristic tumor of about the size of a hempseed developed, corresponding clinically and microscopically to a typical molluscum growth.

Nobel records (*Archiv für Dermatologie und Syphilis*, 1893, p. 929) a favorable result from experimental inoculation. It was done, however, on a subject who had the disease on the genitalia. The skin of the arm in the selected spot was scraped of its uppermost layer, the inoculating material from one of the lesions on the penis rubbed in, and the part bound with silk. After four weeks punctate elevations were noticeable, but it was not till nine weeks after the date of inoculation that the characteristic tumors were to be seen.*

This constitutes the greater part of the affirmative evidence which has been accumulating for some years, and which, as stated in the preliminary part of this paper, can lead to but one conclusion—the

* Crocker mentions (*Diseases of the Skin*, 2d edition, p. 480) among others a successful inoculation by "Horab." In reply to a letter regarding the record of this case, which I had not been able to discover, Dr. Crocker kindly replied that after a careful search he could as yet only find it referred to in the *Journal des maladies cutanées et syphilitiques* of 1891, page 134, in an abstract of a thesis (Paris, 1889) by M. Moreau. In this abstract, which I have since consulted, the name only is given, no details being stated, and a fairly thorough examination has failed to disclose any other record of the case. It is possible, as Dr. Crocker also suggests, that it may in reality be "Haab's" case in a misspelled guise; an examination of Moreau's paper in the original would doubtless clear up the matter.

contagiousness of the disease. The clinical evidence alone is indeed overwhelming, and, unless we are to place an interpretation upon the clinical facts of this disease different from that which we are accustomed to place upon those of other contagious skin diseases, is in itself convincing. Supporting and confirming the clinical side of the question, however, is the success in the cited examples of experimental inoculation, and also the several instances of accidental inoculation referred to. In a careful or even superficial survey of the subject one point presents itself at times boldly—that is, the variable and often long period of incubation. This is for obvious reasons more conspicuously shown in the cases of experimental inoculation, but the same is recognized in a study of the ordinary clinical cases. It is probable that the difficulty in tracing the source of contagion in some instances is due to this very fact; and this also complicates the investigation of the disease by experimental inoculation. As yet from the material at hand the proper method of artificial inoculation can not be definitely stated; there was, in fact, little or no uniformity in the methods employed in the successful instances recorded.* Indeed, until we know the character of the parasite, its mode of entrance, its life habits, etc., very little progress in this direction is to be expected. Of the various parasites alleged to be the cause of the disease, the psorosperm is or was the most promising, but the elaborate investigations by Török and Tommasoli, and also those by Piffard and others, would seem to throw great doubt upon this point. That the disease is parasitic, and that the parasite will be sooner or later recognized, however, no one can question.

* In the numerous unsuccessful attempts at experimental inoculation which have been made from time to time by various investigators different methods were often purposely tried by the same experimenter. In my own attempts the material of both the contents and body of the molluscan tumors, and from recent and advanced lesions, were variously employed; in some instances rubbed in, in others gently rubbed in after removing the outermost layers of the epiderm, in others were pricked in as in tattooing, and in one or two instances introduced just beneath the epidermic covering. All were unsuccessful; in a few experiments minute papules were to be seen for a few days after the inoculation, but these were apparently of a purely inflammatory nature, presenting nothing characteristic, and disappearing rapidly.

