resemblance, and, at any rate, in the human subject, the two cannot well be confounded.

The description by Creighton of the development of the ducts in the guinea-pig, does not obtain in the human subject; for, in this account, the ducts are said to first make their appearance as small channels in the mesoblast; further, "there is certainly no evidence of a process of growth downwards from the rete mucosum under the nipple;" and later on the same author remarks: "the ducts are therefore held to be formed as aggregations of the embryonic cells of the matrix along predetermined lines; that preliminary point may be taken as established."

But, however much it may be established in the guinea-pig, I allege that there is before you ocular demonstration of a different method of formation in the human mamma. No attempt at the formation of a duct can be discerned in the mesoblastic tissue, except in direct continuity with the epithelial ingrowth, and there is abundant evidence of a process of growth downwards from the rete mucosum under the nipple.

It will thus be seen that my observations are in accordance with the views of Kölliker, as referred to above. The conclusions drawn from them may be briefly summarised as follows.

1. The mammary gland is developed from epiblast.
2. The acini do not appear until the ducts are formed by an ingrowth of the epithelial cells of the rete mucosum.
3. The acini are developed from the epithelial cells forming the ducts.
4. The mesoblast takes no part in the formation of the glandular structures.

CASE OF PECULIAR CONGENITAL DEFORMITY OF THE LOWER LIP: OPERATION: RECOVERY.*

By T. SYMPSON, F.R.C.S.,

Surgeon to the Lincoln County Hospital.

As congenital malformations of the lower lip similar to those about to be described are of extremely unfrequent occurrence, and may, moreover, be easily and effectually treated by operation, I have thought it well to place the following examples upon record.

Last June my opinion was sought respecting the case of a vigorous,

well grown girl, aged eight, the muco-membranous and mesial portions of whose lower lip were considerably hypertrophied, and who

* Presented to the Section of Surgery at the Annual Meeting of the British Medical Association in Worcester, August 1882.

also presented on side either of the middle line of the lip and separating the muco-membranous from the transitional part, which was normal, a sulcus of semilunar form having its concavity directed forwards, and measuring three-quarters of an inch in depth by half an inch in length.

This malformation produced great deformity in an otherwise comely girl, made her an object of ridicule to her schoolfellows, and occasioned a large amount of inconvenience through the redundant portion of the prolábium being frequently caught between the teeth during mastication.

I expressed my conviction that there would be no difficulty in forming a shapely lip by means of an operation. Accordingly, on June 14th, the child was placed under the influence of chloroform, the growth and pouches were excised by an elliptical incision, and the edges of the wound accurately approximated by several sutures of Chinese silk. On the 18th, the sutures were removed, and on the 21st, the wound was found to be quite healed.

The photographs now shown afford a fair idea of the appearance of the lip before and subsequent to operation. The first was taken on June 13th, and the other on July 27th.

Microscopical examination showed the growth to consist of dense connective tissue.

The father and mother of the child are strong and healthy, but the mother displays the same peculiarity of her lip as her daughter, though in a minor degree. The lips of three other children—a sister of my patient, and her two brothers—are similarly malformed. The lips of the grandfather and grandmother, as well as those of their two sons, are quite normal in form, and they are not aware that any of their relations, other than those just referred to, show anything exceptional with regard to their lips.

Grandfather, aged 63	} lips normal.
Grandmother, aged 60	
Maternal uncle, aged 34	
Maternal uncle, aged 31	
Father, aged 38	} Two pouches in lower lip.
Mother, aged 35	
First child (girl), aged 11	
Second child (girl), aged 8 (the patient)	
Third child (boy), aged 5	
Fourth child (boy), aged 6 months

The grandmother, whose upper incisors were formerly prominent in a very marked degree, attributes the condition of her daughter's lip to a habit in which she indulged when pregnant with her of biting her lip. The daughter is her oldest child.

In the case of the patient who was operated upon, the existence of true hypertrophy of the lip was manifest. It cannot, therefore, be included among the instances in which the thickening is due to an increase in the size of the natural glands of the part, and which are stated by Mr. Bryant (*Practice of Surgery*, vol. i, pp. 492-3), to be often found both in the upper and lower lip.

With regard to the presence of sacculi, the cases of the patient, her mother, and brothers and sisters, bear a very close resemblance to those related by Mr. Jardine Murray (*British and Foreign Medical Chirurgical Review*, vol. xxvi, p. 502, *et seq.*) After enumerating the conditions on which he considers that the sacculi were not dependent—as hare-lip, erratic development of tooth-sacs, arrested formation of lower lip, and peculiarity of development of frænum—Mr. Murray seems somewhat to incline to the supposition of their being due to intra-uterine disease of the labial glands. Probably, our present knowledge of teratology is not sufficiently precise to enable us to arrive at an accurate conclusion with regard to this vice of conformation; but, as perhaps throwing some light upon the subject, I would ask your attention to what occurs when the lip is in the position of “pouting.” In this condition you may notice that the surface of the normal lip presents a slight depression on each side of the mesial line. It is obvious that an arrest of development of the muscular tissue in these situations would occasion these natural depressions to become more marked, and this, I am inclined to believe, is really what has occurred in the cases in point.

In conclusion, permit me to draw your attention to the fact that it would almost seem as though we had here an example of a malformation arising in a family, and present thus far in two generations only.

ON THE EMPLOYMENT OF ATROPINE IN CORRECTING ERRORS OF REFRACTION.

By ANDERSON CRITCHETT, M.A.,

Ophthalmic Surgeon to St. Mary's Hospital, and Lecturer on Ophthalmic Surgery at St. Mary's Hospital Medical School.

I AM well aware that the subject-matter of this short paper does not contain even a germ of originality. My plea for its publication however, consists in that which must, I think, be an acknowledged fact, namely, that with respect to the employment of atropine in correcting errors of refraction, there exist two antagonistic views. On the one hand, we hear that its use is seldom, if ever, necessary; on the other, it is had recourse to with extreme frequency.

The former of these views is supported by the practice of many leading ophthalmologists, and presents to its opponents such a formidable quadrilateral as the names of Professors Donders, Snellen, Liebreich, and Javal; the first of these being in itself a tower of strength, for it was Professor Donders who first let in the light of knowledge upon the chaotic ideas which once existed, and elevated the entire subject of refraction to the dignity of a science.

The latter of these views is strongly advocated and put in practice by many of those younger workers who have especially devoted themselves to this branch of ophthalmology.

We may feel well assured that, whenever men of high scientific attainments profess to accomplish the same end by widely diverse methods of procedure, good reasons will be advanced on both sides in defence of the particular plan which is selected; and my chief aim in bringing the matter forward is to elicit opinions which may materially aid us in arriving at correct views on the subject, and in establishing some definite rules of practice.

Having formerly acted as clinical assistant to my friend, Mr. John Couper, at Moorfields Hospital, for nearly seven years, I have had ample opportunities of witnessing the treatment of refraction by absolute paresis of the accommodation, as is almost universally practised by this champion of the method by atropine; and, upon the whole, the impression left upon my mind was favourable to his plan, though I must admit that patients were occasionally put to considerable inconvenience without a compensating advantage; and where, for all practical purposes, the same end might have been otherwise obtained. I find that in my own practice, in working out six hundred and fourteen cases of astigmatism, I have induced paresis of accommodation in two hundred and seventy-three; and, in rather a less proportion, in cases of simple hypermetropia with spasm, and in progressive myopia. Inasmuch as the treatment by atropine is frequently objected to by patients, and involves not a little delay and inconvenience to all concerned, it is self-evident that I was only driven to its adoption by the difficulty, and, as it seemed to me in some cases, im-

possibility, of arriving at a correct and scientific conclusion without it; nay, more, I have found, in not a few instances, that this was the only method of inducing the eyes to submit to a refractive correction which was essential to their well-being, but which, while the ciliary muscle retained its spasmodic power, they would by no means tolerate.

I may, perhaps, best explain my meaning, and establish my position, by citing a typical case which bears upon these points. A young lady, aged eleven, was brought to me more than a year ago, with the statement that for some months past it had been found impossible to proceed with her studies, since every effort to read produced pain and confusion. On testing her sight, I found that each eye saw $\frac{2}{3}$, and was improved to the extent of one letter in $\frac{3}{8}$ by $-.50$ D. She would tolerate no convex glass. On ophthalmoscopic examination, I diagnosed the existence of hypermetropia to the amount of at least 4.5 D, with slight astigmatism in addition, while the discs were in that state of hyperæmia which Mr. Couper has described in connection with high degrees of uncorrected hypermetropia. The eyes were subjected to the full atropine treatment, and examined at intervals of three days. On the first occasion, the child tolerated $+1.50$ D, with which she saw $\frac{3}{8}$, and was slightly assisted by the addition of weak convex cylinders. On the sixth day she selected $+2.50$ D, and I was then able to ascertain by the ophthalmoscope that the hypermetropia consisted of fully 6 D. Three days later, the patient, with $+4.25$ D and weak cylinders, saw nearly $\frac{3}{8}$.

On the fourteenth day, very little progress had been made since the last occasion. I therefore substituted sulphate of duboisia, two grains to one ounce, for the atropine, with the remarkable result that, at the end of three days, the manifest hypermetropia amounted to 7 D, and the vision obtained equalled $\frac{3}{8}$. In accordance with the suggestion made by Professor Knapp, I, in determining the final correction, made due allowance for the partial recovery of accommodation. The child was enjoined to wear the glasses constantly; in fact, to regard them as part of her attire. I saw her a month ago. She sees $\frac{3}{8}$, and reads Jäger I with each eye. The retinal hyperæmia has entirely disappeared, and the parents informed me that she decidedly resented any proposal to take away her glasses.

I merely select this as a specimen of a large group of cases which occur in the practice of every ophthalmic surgeon; and I venture to submit that, in such instances, I should be unable either to arrive at a true diagnosis, or to establish a proper refractive correction, unless aided by complete paresis of the ciliary muscle through the agency of mydriatics. I readily agree, however, with those who assert that the ciliary muscle should, wherever it is practicable, be allowed free and natural action; and I admit that the dogmatic treatment by atropine, where the eyes are forced to accept a permanent and complete correction, is open to the imputation that they are doomed to a perpetual though friendly servitude; but in many instances the sense of permanent relief from strain is so agreeable to the patient, that “the captive hugs his chain”.

CASE OF SPASTIC PARAPLEGIA IN AN ACROBAT.

By H. DONKIN, M.B., F.R.C.P.

Senior Assistant-Physician to the Westminster Hospital.

ON October 12th, 1881, I saw, among my out-patients at Westminster Hospital, an acrobat or “contortionist”, aged 20, who complained of weakness and tremulousness of his legs, the left being the worse. These symptoms had been coming on gradually, being first noticed about six months previously, and were steadily increasing. He was apparently in excellent health, and made no other complaint. He had been a “delicate child”, but “in the business” ever since he was four years old. He has certainly not had syphilis, nor, indeed, any illness whatever. His family history is good, and he has several brothers and sisters, healthy, and all following the same occupation as himself. About three years before I saw him, he appears to have hurt his back while going backwards quickly. He felt the pain for about three or four weeks at the most, and kept on performing without intermission, thus continuing his work till he came to the hospital; the symptoms of weakness and shakiness of the legs having, as I have said, been noticed in a very slight degree only six months before coming, and the previous two years and a half (since the hurt to his back) having been absolutely free from any kind of discomfort or failing.

On examination, I found him apparently quite healthy, with the exception of the symptoms of which he complained. He seemed to have some difficulty in walking, saying his legs were not strong enough for him to walk fast; and he used a stick. The front part of the left foot occasionally scraped on the floor as he tried to mend his pace. His muscular development was everywhere good. The knee-