ON THE DISTRIBUTION OF CALCULOUS DISEASE IN NORFOLK.

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THE data from which the following paper has been compiled, consist of 1,936 cases of stone, which have either been the subject of operation, or of *post mortem* examination, and of which the localities have been recorded. These have been derived from the following sources.

<i>Public Practice.</i>	
Norfolk and Norwich Hospital, 1772 to 1885...	1,503 cases.
West Norfolk and Lynn Hospital, 1835 to 1885	124 "
Yarmouth Hospital, 1839 to 1874	72 "

<i>Private Practice.</i>	
Dr. Lubbock, Mr. C. M. Gibson, Mr. R. E. Gibson, and Mr. Cadge, Norwich; Dr. John Lowe, Mr. G. B. Sweeting, and Mr. W. G. Walford, King's Lynn; and Mr. R. Marriott, Swaffham	237 "

Total ... 1,936

Of these, the localities of 1,760 Norfolk cases were placed on a map of the county; they were then transferred to an ordnance-map (one inch to the mile); the geological map, as far as this has, up to the present, been published, being employed. The distribution of the cases was finally again checked from the original list.¹

It happens that the ordnance-map of the county is divided from west to east, by the sheets in which it is published, into three nearly equal sections, of which the western section contains 677 square miles; the central, 705 square miles; and the eastern, 640 square miles. From the above materials we find that, taking the entire county, one case of stone occurs in every 1.1 square mile. The proportion, however, differs in each of the sections, the disease increasing in frequency from west to east. Thus

	Western Section.	Central Section.	Eastern Section.
One case in every ...	3.0	1.5	.6 square miles
Excluding towns of more than 10,000 inhabitants	3.7	1.5	1.09 "

In the towns of more than 10,000 population, 1 case occurs: in King's Lynn, .11; in Great Yarmouth, .04; in Norwich, 0.3; to each square mile.

Parallel to these arbitrary divisions, the Great Ouse runs northwards through nearly the centre of West Norfolk, emptying itself into the Wash on the west side of the town of King's Lynn. It has long been a matter of observation on the part of the surgeons of the Lynn Hospital that they seldom, if ever, have a stone case from Marshland, that is, west of the Ouse. Since 1865 (twenty years), 53 calculi have been added to the collection at this hospital; 50 of these came from the east side of the river, 3 only from the west. Of these 3, 1 was from Long Sutton, in Lincolnshire; 1 from Friday Bridge in Cambridgeshire; and 1 from Marshland, Terrington St. Clement's; this last was removed by myself, from a young child, whose parents had immigrated into Marshland, from High Norfolk, about a year before its birth. By taking the more extended data on the map, which include cases cut in Norwich in 1786, 1799 (probably two brothers), 1811, 1824, and 1825, and one which was crushed in Lynn Hospital in 1846, and cut in 1852, thus counting as two cases, we find that in High Norfolk, that is east of the Ouse, one case occurs in every 2.5 square miles; while in Marshland, that is west of the river, one case occurs in every 8.2 square miles. It must further be remembered that some years ago labour was much better paid in Marshland than in High Norfolk, so that immigrations into Marshland were constantly taking place from the last named district; and, moreover, prior to 1820, the Great Ouse, in the lower part of its course, ran considerably more to the westward than it does now. The limitation of the disease by the river in question, is a matter of great interest from an etiological point of view. Not only do the cases come quite up to the east bank of the river from Southery to Lynn, but they also come quite up to the coast from Lynn to Yarmouth. So much is this the case, that there is scarcely a village on the seaboard of the county in which one or more cases have not occurred; the comparatively important town of Hunstanton being one of the very few exceptions. On the southern boundary of the county the cases extend, with little if any diminution in frequency, into the adjoining one of Suffolk.

¹ At the meeting of the East Anglian Branch, held at Cambridge, in June last, this map was exhibited, for which occasion the present communication was prepared. It is obvious that the data given above do not show the actual number of stone cases which have occurred in Norfolk, but only their relative distribution as far as I have been able to arrive at it.

In East Norfolk, the cases tend to follow the course of certain of the rivers, namely, the Bure, the Waveney, the Tese, and the Ket. This is not observable with the rivers in other parts of the county.

The geological survey-maps for West Norfolk and for the district round East Dereham have not yet been published. The subjoined remarks, therefore, apply only to East Norfolk and Mid Norfolk, excepting the district round Dereham. Excluding the large towns, Norwich and Great Yarmouth, 801 cases occur upon the following formations as nearly as can be ascertained.

Postglacial	...	Aluvium	...	...	...	...
		River-gravel	...	...	...	1
		Sand and gravel	...	...	...	20
		Gravel and sand	...	...	...	189
Glacial Drift	...	Boulder-clay	...	...	...	155
		Loam and sandy loam	...	...	...	149
Norwich Crag	...	...	...	...	...	245
Upper Chalk	...	...	...	...	...	42

801

The extensive tract of chalk which occupies West Norfolk does not appear in the above summary, but it will be remembered that this division of Norfolk produces only one stone-case in every three square miles, against one to every three-fifths of a square mile of East Norfolk. The rivers which the cases follow are those whose course is outlined by the Norwich Crag. Certain towns and villages are specially subject to the disease; for example—

Population, 1881.	Number of Cases.
2,647 ... Aylsham	23
1,090 ... North Elmham	14
4,566 ... Wymondham	21
470 ... Binham	8
Others are exempt, or nearly so.	
1,600 ... Hunstanton	0
1,407 ... Watton	0
3,264 ... Downham	1

Adjoining villages sometimes vary considerably.

1,127 ... Pulham, St. Mary Magdalen	2
822 ... Pulham, St. Mary the Virgin	8

The village of North Wootton, since 1865, has had 1 case of lithotripsy, 2 of lithotomy, 1 of urethral extraction, 1 of renal (uric acid), 3 of uric acid gravel = 8 cases.

324 ... North Wootton	8
197 ... South Wootton	0
345 ... Castle Rising	0
195 ... Wolferton	1

The three last named parishes surround North Wootton on three sides, the sea bounding it on the fourth. Moreover, of the eight cases above named, seven occurred in one group of houses using the same water-supply.

Taking into consideration such facts as the above, together with the limitation of the disease by the Great Ouse and the riparian aggregation of the cases along the Bure, the Waveney, etc., and its absence from the other rivers, one cannot avoid the conclusion that continued observations on the distribution will eventually lead to some definite conclusions as to the cause of the frequency of the disease in Norfolk. In the present communication, however, this aspect of the subject is purposely avoided.

My best thanks are due to those gentlemen who have freely replied to my queries, and afforded me information, especially to Mr. Cadge. For the calculations respecting the distribution of the disease in the various areas, my thanks are due to Mr. E. G. Mawbey, the borough surveyor of King's Lynn.

SUGGESTED IMPROVEMENTS IN EXCISION OF THE KNEE-JOINT, AND IN THE LIGATURE OF LARGE ARTERIES.

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THERE are some points in the treatment of excision of the knee-joint, both at the time of operation and subsequently, which seem to me to deserve particular attention. I have had a good many of these cases under treatment from time to time in the Tyrone Infirmary; and the suggestions I have now to make, and which I desire shortly to detail, are the outcome of my experience.

In the first place, I always make the first incision nearly straight across the limb, and as small in extent as possible; with one swoop of the knife the ligamentum patellæ is cut through, and the joint opened.

The upper end of the ligament is then seized and dissected off the bone, and the patella removed. The subsequent steps of the operation require no comment. When the bleeding has ceased, the cut surfaces of bone are placed in close apposition, and the divided ends of the ligamentum patellæ are strongly stitched together with carbolised silk; the skin-flaps are brought together in the usual manner, and the wound closed, no drainage-tube being inserted. The limb is at once put up in plaster-of-Paris, with a back-splint of strong hoop-iron; another strong piece of iron is bent over the situation of the wound, so as to allow the application of the proper dressings; two side-splints of hoop-iron, about eighteen inches long, and slightly hollowed over the wound, are placed lengthways, across the site of the joint, and over the plaster-of-Paris, the whole being firmly secured by a bandage. A completely rigid and comfortable bed is thus secured for the injured limb. The upper and lower portions of the limb are padded with French wadding, and, close to the wound, with carbolie tow. If there be any discharge from the wound it will penetrate the tow, which can be readily removed and replaced without disturbing the limb.

I have heard a great many discussions, and read a great many elaborate articles, on the proper method of treating these cases; but, as yet, I have seen no apparatus which is so easy of application or so reliable as the plaster case I have attempted to describe, and which is coming into very general use.

The chief points which this short paper is intended to emphasise are—1, the small extent of the primary wound really necessary; 2, the preservation of the ligamentum patellæ, not by its non-division, but by the divided ends being stitched together; 3, the enormous anterior support afforded by the preservation of the ligament, and the lessened tendency to displacement; 4, the increased power given to the limb by preserving almost intact the insertion of the powerful crural muscles; 5, that stitching the patellar ligament seems quite as efficacious as the recommendation by some authors of its non-division; and that, while effecting subsequently the same purpose, it in no way hinders, or renders more difficult, excision of the joint.

In all my recent cases of amputation of the thigh, I have tied the femoral artery with a strong carbolised silk ligature, and cut off both ends short. The wound has healed, and remained healed, in every case. Thus a troublesome cause of irritation—one end of the ligature being left hanging from the flap—and a very great impediment to the healing of the flap-wound by first intention, has been effectually got rid of.

NOTE ON THE PREVENTION OF MAMMARY ABSCESS.

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INSTANCES are not unfrequently met with where the function of lactation is either not considered advisable, as in cases of syphilitic taint, marked tendency to phthisis, epilepsy, etc.; or where, from the child being stillborn, or the nipples depressed, subject to cracks, fissures, or erosions, the function of lactation is unnecessary or unable to be persisted in. Apart from these conditions, there is unquestionably a growing tendency for mothers to avoid the responsibility of suckling their offspring. Milk is secreted, and, if it be not drawn off at appropriate intervals, the breasts become engorged, and not unfrequently inflamed, mammary abscess resulting. From whatever cause it may be, we are often obliged to take steps to prevent such a contingency.

For many years, the old-fashioned methods in general vogue, if not advocated, were at least tacitly acquiesced in—such as rubbing the breasts with sweet oil; oil and extract of belladonna; glycerine and belladonna; belladonna plasters; evaporating lotions; strapping the breasts, and other like expedients.

It being believed that friction of any kind, in the large majority of cases, rather tended to produce than prevent mammary abscess, it was long since discarded. The application of a long strip of belladonna plaster, sixteen or eighteen inches long and six or eight inches deep, with round apertures, so as to leave the nipples free, tightly across the chest, the breasts being brought well up towards the median line, for many years was the only resource adopted, beyond careful regulation of the diet, abstention from fluids, gentle purgation, etc. This method never failed, but it was often found that the smell of the belladonna produced so much nausea in delicate patients as to preclude the employment of it.

Thinking that, in all probability, the pressure exerted con-

tributed greatly to the advantage derived, I was induced to rely upon a few turns of a rib-bandage, or the application of a thin towel or diaper across the chest, the breasts being brought well towards the sternum. Since adopting this method, I have never known it fail. Not a single instance of mammary abscess has occurred in a long series of cases, extending over several years. The only precaution requisite is to apply the pressure on the second day following parturition, before the breasts begin to fill, and to see that the whole of the glands are included.

It is well to elevate the shoulders somewhat more than usual, and not to allow the bed-clothes to cover the upper part of the chest, the sheet alone sufficing to prevent any risk of chill. Restriction as to the amount of fluid, for the first few days, and attention to the bowels, are all that is requisite to ensure success. Some little inconvenience, a feeling of tightness, or burning pain, is often experienced; but, if the pressure be maintained, no harm results, and, within the course of a few days, the turgescence subsides, and the difficulty is at an end.

In order to keep the bandage or towel from slipping down, a shoulder strap from back to front, or merely pinning the bandage to the night-dress, suffices.

Where the secretion of milk seems to be unusually abundant, a mixture alone of bromide and iodide of potassium may be prescribed with benefit. In only a very few instances has it been found requisite to draw off a small quantity of milk, by means of a breast-pump or exhausted soda-water bottle, and this only once or twice.

I venture to think these remarks may prove of value to many, as I not unfrequently see instances of mammary abscess brought on, I verily believe, by the old-fashioned method of rubbing and irritating the breasts.

A CASE OF FATAL ANÆMIA.

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EDWARD D., a coachbuilder, aged 47, was admitted into the Middlesex Hospital on December 24th, 1884. His family-history presented no point of particular interest, except that one sister had died of phthisis. He had himself always previously enjoyed good health, and had lived well. Five months before coming under observation he had begun to be troubled with pain in the region of the stomach, accompanied by sickness, the pain being worst after food, and this had continued more or less up to the time of admission. He had been able to continue at his work up to December 20th, and had been confined to bed for one day only before coming to the hospital.

On admission, he complained of great weakness, cough, shortness of breath, and loss of appetite. His pulse was 84, regular, but weak and compressible; respiration, 18; temperature, 102.2 Fahr.; tongue pale, coated, and tremulous. He was sparely nourished, and the skin presented a well marked yellowish tint. The chest was of the barrel-shaped type, and was resonant over the precordial area, and over-resonant elsewhere. The breath-sounds were accompanied by sonorous and sibilant sounds on both sides, front and back. The heart's sounds were normal but feeble, and there was a venous hum in both jugulars. The abdomen was soft and flaccid; the liver-dulness extended two inches below the costal margin in the nipple-line, and the spleen could be easily felt an inch and a half below the costal margin on the left side. There was well marked œdema of both ankles and legs. The urine had a specific gravity of 1025, and was acid, and free from albumen. The evening temperature was 103.4°. Next morning, December 25th, his temperature was 102.4°, and the report was that he had slept badly. The abdomen was tympanitic, the cough slight, and there was no expectoration; there was less œdema of the legs; temperature during the day averaged about 102°.

On the following morning, December 26th, the temperature was 101.6°. He had been delirious during the night; there was still less œdema, and the tongue was clean. The highest temperature recorded during the day was 102.2°, the lowest 101°.

Next day, December 27th, there was but little cough; the tongue was dry, and slightly furred; the pulse 104, and compressible; the bronchitic sounds were rather more intense than before.

On examination with the ophthalmoscope, flame-shaped retinal hæmorrhages were seen in the fundus of the right eye, but none were detected in the left. The blood was found to have a corpuscular richness of exactly fifty per cent., the colouring-matter reaching only twenty-five per cent.; the white corpuscles were about normal; the red discs were also normal in size and shape. The spleen was further increased in size, being felt two inches and a half below the costal