

sum to unity, by the like complement of the product of the four sines of the sides and angles; and the square root of the quotient shall be the sine of half the unknown angle.

If we work by logarithms, the operation will not be very troublesome; but the rule needs not be used, unless when a table of the trigonometrical analogies is wanting. To supply which, the foregoing theorems will be found sufficient, and of ready use; being either committed to memory, or noted down on the blank leaf of the trigonometrical tables.

Note, The schemes may be better, raised in card-paper, or with bent wires and threads.

LXXI. *An Account of Two extraordinary Cases of Gall-Stones.* By James Johnstone, M. D. of Kidderminster. Communicated by the Rev. Charles Lyttelton, L. L. D. Dean of Exeter.

To the Rev. Dr. Lyttelton, Dean of Exeter.

Rev. Sir,

Read Feb. 9,
1758.

According to promise I send you a short account of the two extraordinary cases we talked of, the last time I had the pleasure of seeing you at Kidderminster.

The truth of the first narrated case you are already a sufficient judge of; and if it is at all necessary to ascertain

ascertain the second in like manner, I can at any time produce the poor woman and her husband before you, who will attest the truth of sufferings, which will not easily escape their memory.

You are at liberty to dispose of this paper as you shall think proper. I am,

Reverend Sir,

Your respectful and most humble Servant,

Kidderminster,
Sept. 11. 1757.

J. Johnstone.

TH^{O'} it is now pretty well known, that colicky and icteric diseases often arise from gall-stones generated in the bilious receptacle, and obstructing its canals; yet an example of one, of such enormous size, voided into the *duodenum* from the *ductus communis*, as happened in the first of the following cases, is a very rare, if not intirely an unexampled occurrence. It will encourage us not too easily to despair of the expulsion of the largest *calculi* from the gall-bladder; and will teach us, that all violent attacks of pain about the stomach are not owing to gout reflected upon that organ: it will make us more cautious of giving drastic cathartics, heating and inflaming medicines, upon such a vague presumption; and ought to dispose those, who are trusted with the lives of their fellow-creatures, to a nicer observation of even the minutest symptoms and circumstances, which may occur in diseases.

The second case points out, under certain circumstances, the practicability of extracting, by incision into the

the gall-bladder itself, those *calculi*, which, from their figure, or other impediments, cannot be voided in the natural way. The method of performing this unusual operation, and some instances of its success, have already been made public in the *Memoires de l'Acad. de Chirurg.*

1. Mrs. F——, a sedentary corpulent old lady, had been much subject to colicky complaints, without jaundice, in the vigour of life. The seat of the pain was chiefly under the right *hypocondrium*, as high as the stomach. She had been tolerably free from it for at least eight years past. December 5, 1753, about eleven o'clock in the evening, she was suddenly seized with a violent pain, extending from that part of the stomach lying under the right side, thro' to her back. She compared it to a sword driven in that direction. This pain continued not only with unremitting violence, but even increased, till seven o'clock in the morning: all this time she vomited and strained almost incessantly; but after her stomach was emptied of its contents, nothing came up besides clear slime, streaked with blood. About seven o'clock in the morning she felt her pain fall or move lower, as she expressed it, and from that time became remarkably easier. Soon after this change, she became extremely sick, and vomited up, for the first time, a prodigious quantity of greenish yellow bile. She had not before this seizure been remarkably costive; and in her pain had a free motion to stool with effect; but during the remainder of the (6th) day had none, tho' all this time emollient clysters were injected; and she took regularly

every two hours a powder of *magnes. alb. terr. fol. tartar. tart. vitriol. ana* ℥j. *ol. nuc. mosch. gutt. j.* with a draught of the *succ. limon. & sal. absinth.* But in the middle of the night, and all-day (the 7th), she had an abundant discharge of loose bilious stools. She had continued free from excessive pain since the morning of the former day, only now and then complained of uneasiness sometimes in one, sometimes in another, part of her bowels. About twenty-four hours after her first seizure, she felt a great pain striking towards the bottom of her back, and one hour after voided the extraordinary *calculus*, of which the figure and description are subjoined. Some time after pieces of skins were voided by stool, which were evidently of the texture and appearance of the internal villous coat of the intestines and gall-bladder. The above medicines were the only ones she used, by my direction, under her painful complaint, excepting an external fomentation, and bleeding, which the hardness and contractedness of her pulse seemed to require. She was ordered to drink plentifully of thin broths, and other soft diuient liquors. During the course of her disorder she had no appearance of jaundice, nor since; and, considering her years, enjoys at present (Sept. 1757) very good health.

This *calculus*, as appears by the figure, was of a pyriform shape, resembling the form of the *cystis fellea* itself. Its surface was quite smooth and polished, excepting towards the base, at that part marked A, where it was scabrous, as if some other substance had lain contiguous to it. When broken through, it was composed of concentric laminæ, which were alternately white and ochre-coloured. In length it measured

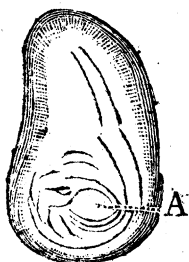
measured one inch and three tenths; its transverse section measured at least seven tenths of an inch. It had a saponaceous smoothness, like other gall-stones, and floated upon water. It weighed only about 126 grains.

Tho' it be difficult to conceive, how so bulky a substance, generated in the gall-bladder, could be conveyed along so narrow a passage as the common biliary duct, especially considering the obliquity of its insertion for near half an inch of length betwixt the coats of the *duodenum*; yet there seem sufficient *data* in the above case to prove, that this animal stone was not formed in the alimentary tube, but (large as it was) had come into it from the *ductus communis choledochus*.

The shape and saponaceous smoothness, and colour of the laminæ, of this substance, shew it was moulded in the gall-bladder, and formed from bilious particles. The severe pain and torture, and enormous vomiting, she underwent, for seven hours after her first seizure, argue, that it must then be lodged in some canal much narrower and straighter than the alimentary canal; for so soon as it dropped into that, the severe pain in a great measure ceased.

But that straight canal, in which it was situated during those seven hours of torture, could be no other than the *ductus communis choledochus*; for, during this space of time, no bile was emptied into the bowels, nor thrown up by the strongest efforts of vomiting. But no sooner had she perceived the cause of her pain to move or drop downwards (a sensation, which points out the precise moment the stone must have dropped into the *duodenum*), than

she began to sicken, and instantly after vomited up a vast quantity of bilious matter; which now, from the de-obstructed duct, began to flow freely into the *duodenum*. The obstruction of the *ductus choledochus* was of too short a duration (only three hours) to occasion any observable jaundice. And it appears by the bloody flesh-like knots, thrown up with phlegm by vomiting, that the passage of the substance was not effected without considerable laceration of the small bilious ducts. And this easily accounts for the separation of the villous coat, which afterwards appeared in this patient's stools.



This coarse delineation represents the figure and true bulk of the *calculus*; which, I believe, is still in my patient's custody.

2. In February 1752. I was called to relieve a poor woman of this place, Sarah Ewdall, aged 30 years and upwards, and the mother of several children. She laboured under the jaundice, and complained of a severe acute pain striking thro' from the right *hypochondrium* to her back, with frequent vomitings. A præternatural hardness, of a compass not exceeding the hollow of the hand, was then plainly to be felt at the pit of the stomach, or a little nearer to the right *hypochondrium*. When that particular part was pressed, she complained of great pain. The pain at this part was always increased by attempting to lie upon the left side. She was blooded,

blooded, fomented externally, had emollient saponaceous clysters injected, and a nitrous apozem, and pills composed of *galban.* & *sap. Castillensf.* and soon after recovered. She had frequent returns of the same complaint after this; but I saw her not again till Jan. 1755, when she lay insensible in a fit, which for several days deprived her of the use of her speech and of all her senses, only she tossed her limbs about. About a quarter of a year after she had recovered from this fit, Mr. Cooper of this place, her apothecary, informed me, that from a small sore at the pit of her stomach, which came since her last illness, she had voided several gall-stones. Curiosity prompted me to inquire into the matter of fact from herself. She shewed me the sore, which was now almost cicatrized. She said, that soon after her last illness a little pimple arose upon that part of the pit of the stomach, which had been hard ever since she had been subject to the jaundice. This pimple broke, ran matter, and at different times the *calculi*, which she shewed me, had come out with the matter. Her stomach had been somewhat painful before it broke, but was now easy. The *calculi*, which she shewed me, had the appearance of being fragments of larger ones, and some were almost dust; tho' she assured me they all came from the sore in that condition. Of these fragments I have two or three of the largest now in my custody: they are light, swim on water, smooth like soap; are of a yellow colour, and in some parts brown like snuff; and consist of similar concentrical layers. The poor woman has since then been troubled with returns of pain and jaundice, in the intervals of which her skin is perfectly clear

and white. She is still alive, and ready to attest the truth of this narrative.

Kidderminster,
Sept. 11th, 1757.

J. Johnstone.

LXXII. *A remarkable Case of Cohesions of all the Intestines, &c. in a Man of about Thirty-four Years of Age, who died some time last Summer, and afterwards fell under the Inspection of Mr. Nicholas Jenty.*

Read Feb. 9, 1758. **T**HE subject was tall, and partly emaciated. I found nothing externally but a wound in the left side, which seemed to me to have been degenerated into an ulcer. As I did not know the man when he was alive, and had him two days after his decease, I cannot give an immediate account of the cause of his death. But in opening his abdomen, I found the epiploon adhering close to the intestines, in such a manner, that I could not part it without tearing it. It felt rough and dry. And as I was going to remove the intestines, to examine the mesentery, I found them so coherent one with the other, that it was impossible for me to divide them without laceration. Then I inflated the intestinal tube, for the inspection of this extraordinary phenomenon; but, to my great surprize, all the external parts of the intestines appeared smooth; very few of the circumvolutions were seen, occasioned by the strong lateral cohesions of their sides
with