

**Lithographs : in the eleventh volume of the Medico-Chirurgical Transactions published in London, A.D. 1820, is a paper, entitled A statistical inquiry into the frequency of stone in the bladder in Great Britain and Ireland / by Richard Smith.**

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# LITHOGRAPHS.

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IN THE ELEVENTH VOLUME OF  
THE MEDICO-CHIRURGICAL TRANSACTIONS,

Published in London, A.D. 1820,

IS A PAPER, ENTITLED

## A STATISTICAL INQUIRY

INTO THE FREQUENCY OF

## STONE IN THE BLADDER

IN

GREAT BRITAIN & IRELAND.

BY

RICHARD SMITH, Esq.,

SENIOR SURGEON TO THE BRISTOL INFIRMARY.

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The Cabinet of Calculi, which furnished materials for the above Paper, containing some Specimens considered to be worthy of particular notice, it was determined to have representations of the latter taken, and the sheets which follow are the results. Another leaf or two may probably be added hereafter.

Twelve years have now elapsed since the above publication, and the Collection has been augmented with above a hundred additional sets. By "a set" is meant the product of each individual subject. In some cases there is only a single stone—in others, two, three, six, ten, twenty, or more, of considerable size. In cases of *gravel*, as they are termed, one set may have several hundred.

The Museum was, in November, 1826, deposited at the above Institution, where it is open to the inspection of all Professional and Scientific Persons, by application to either of the Physicians or Surgeons of the Establishment, or to the House-Surgeon and Apothecary.

June, 1832.



## LITHOGRAPHS.

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These calculi, excepting where the form was an objection, are sawed asunder so as to exhibit both the external surface and internal arrangement. The representations correspond in size with the original.

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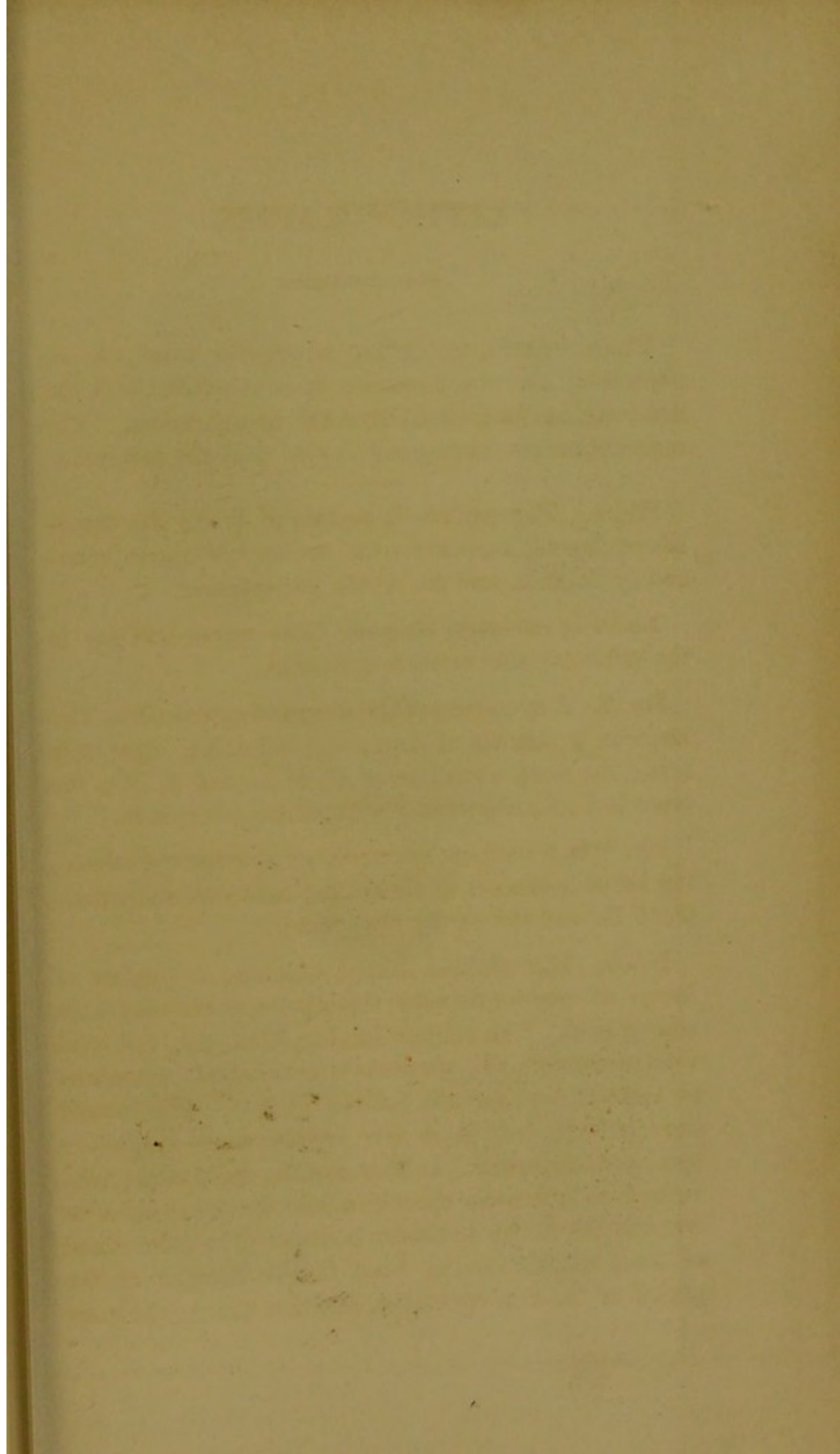
No. 1. The nucleus is oxalate of lime ; the super-added layers, together with the appendix, are alternately O. of L. and the earthy phosphates.

No. 2 is curiously shaped. The upper half lay in the urethra ; the whole is uric acid.

No. 3. A specimen of the alternating calculus. The nucleus is oxalate of lime ; the adjoining layer uric acid ; the next, a mixture of O. of L. and U. A. ; the crust is U. A. adulterated with earthy phosphate.

No. 4 is a curious specimen of eccentric nucleus ; the latter is oxalate of lime ; the layers are alternately O. of L. and the earthy phosphates.

No. 5. The almond-shaped calculus is oxalate of lime ; the cup is uric acid ; both pure, or but very little adulterated. The subject having been cut, the oval was extracted ; the surgeon was satisfied, examined no further, and put his patient to bed. The wound soon healed, but in a few weeks some suspicious symptoms recurred. In four months the patient submitted to a second operation, and the other calculus was extracted. No doubt can reasonably be entertained of both calculi having been in the bladder at the period of the first operation, and that the second stone







1



1



2



3



3



4



4



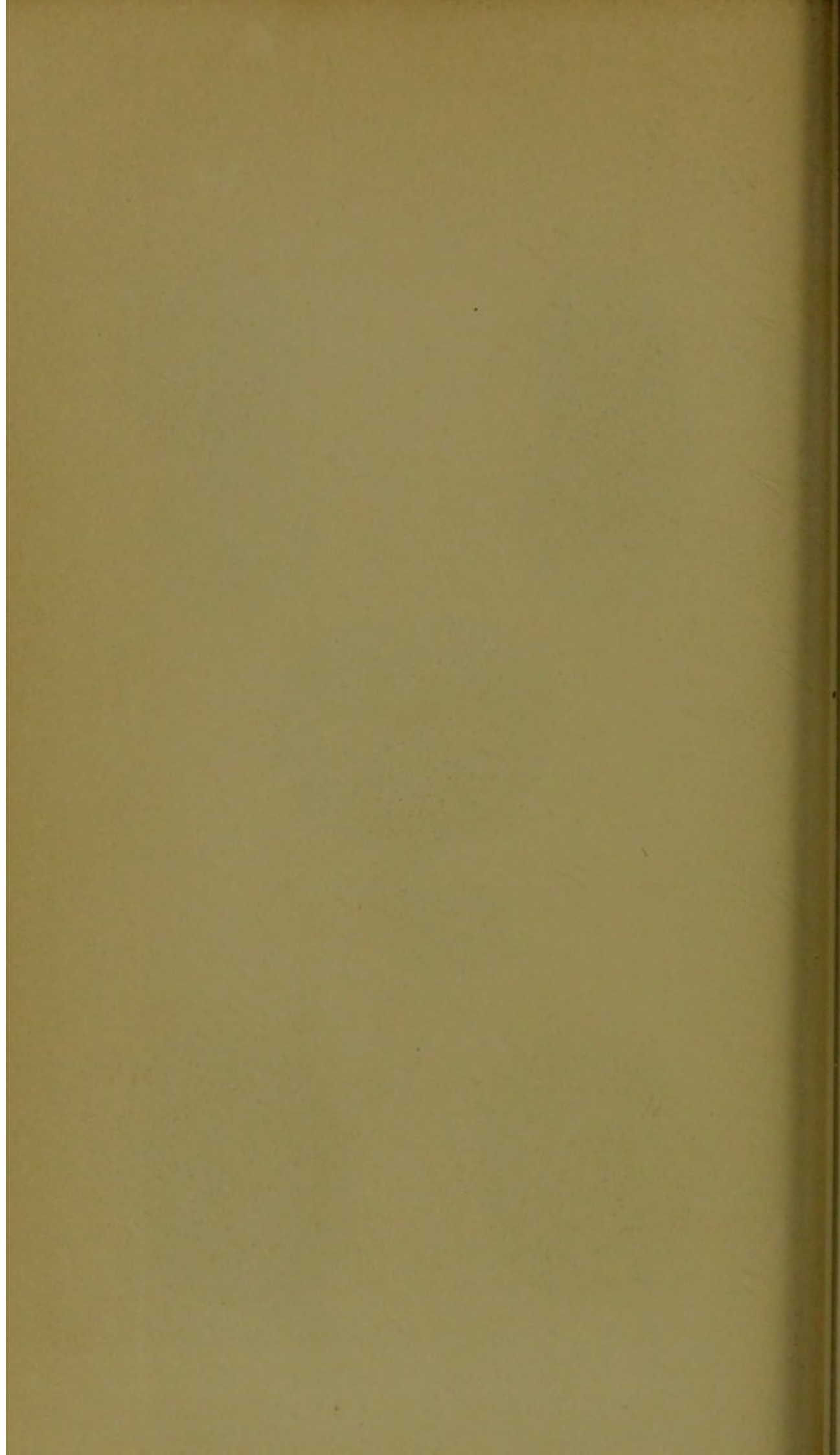
5



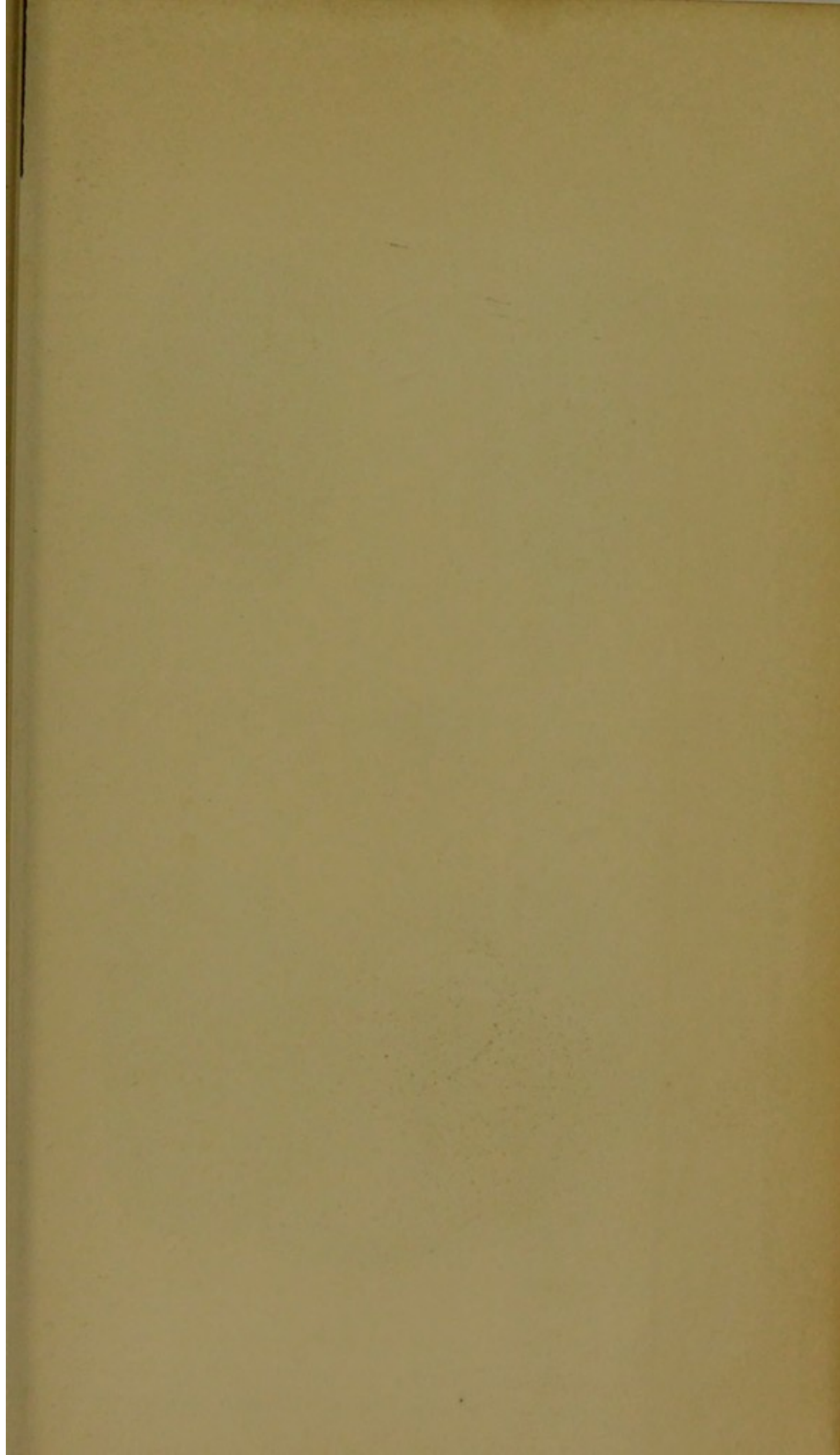
6



6











10



11



12



13



7



7



8

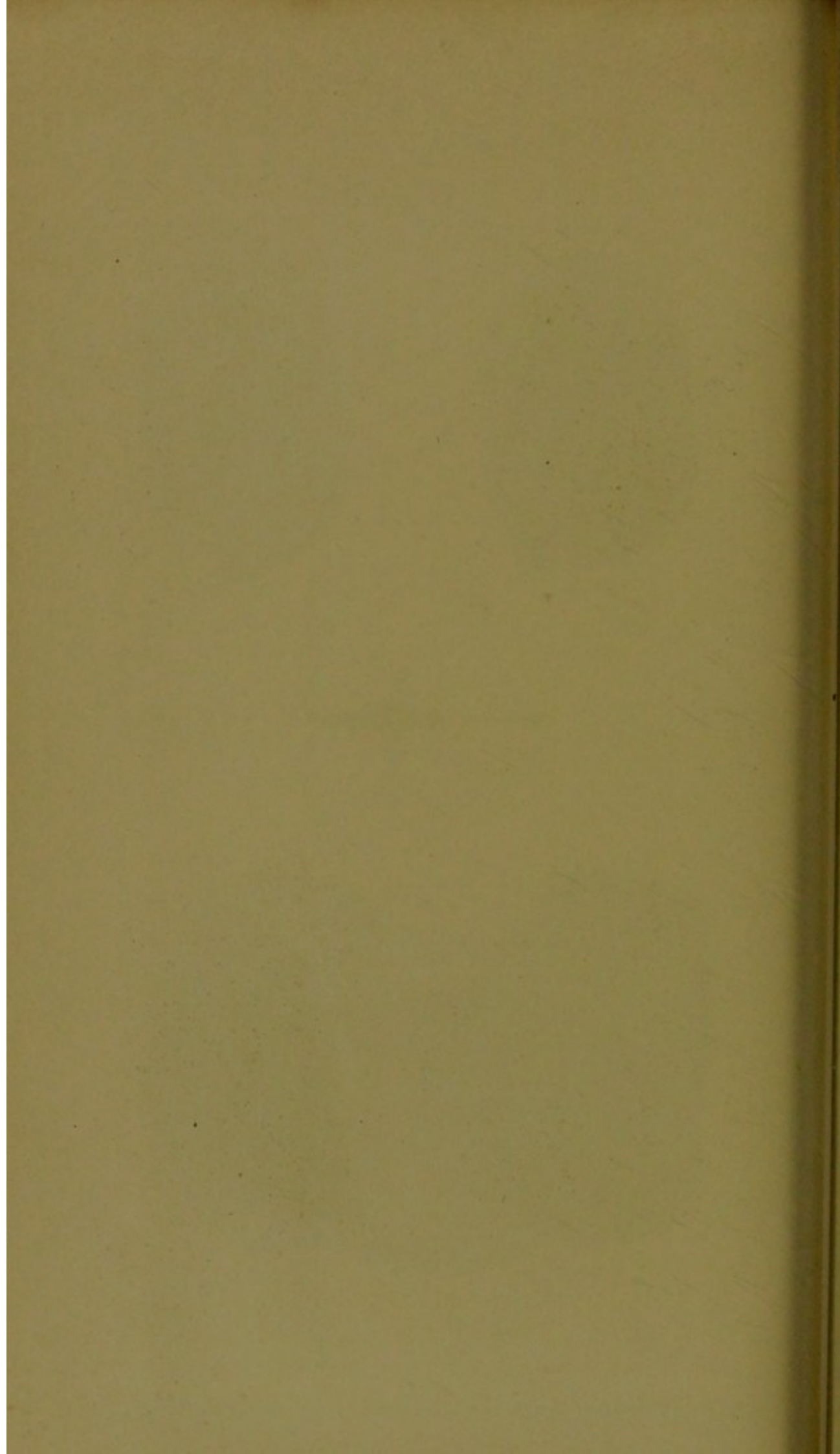


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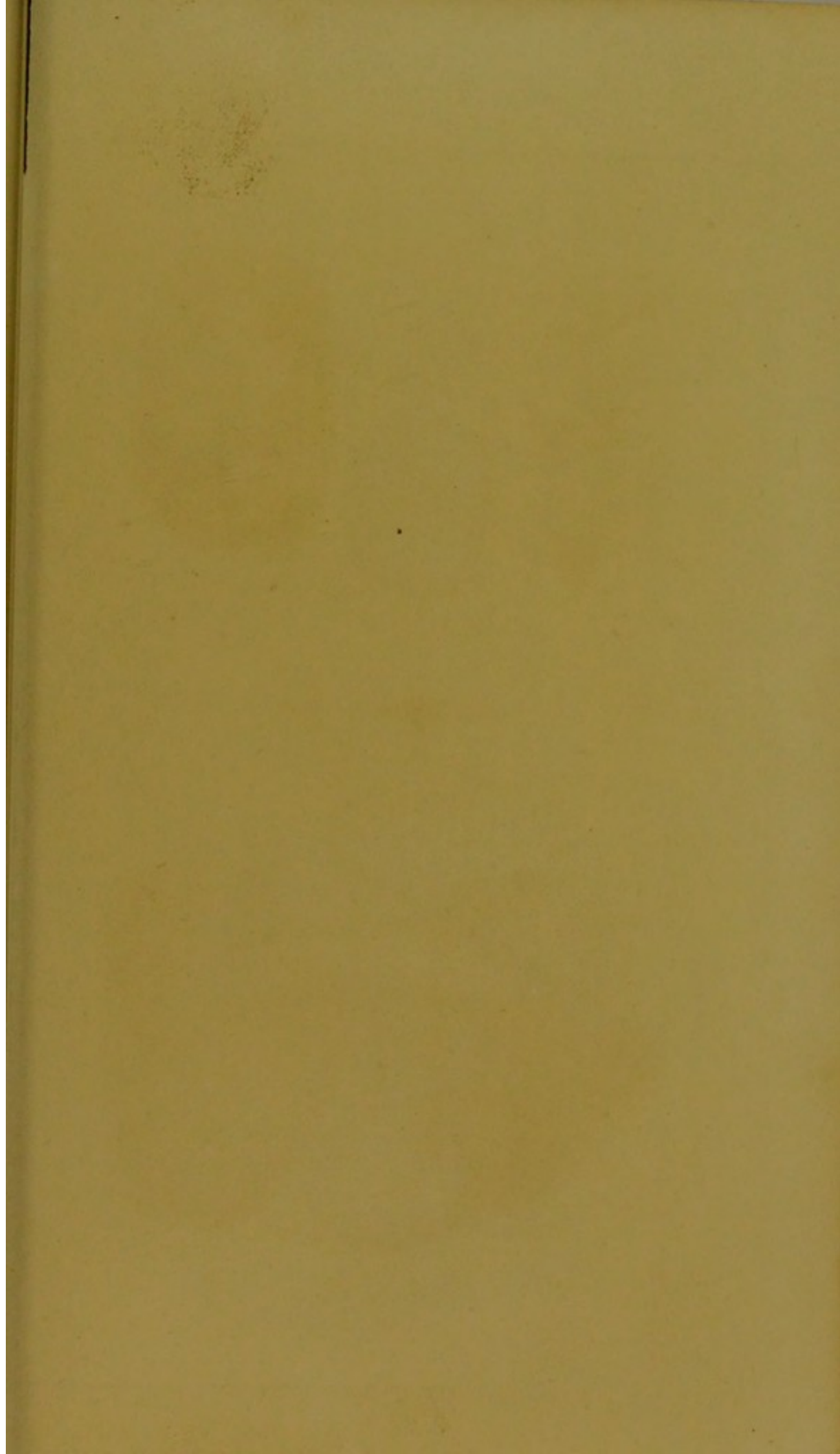


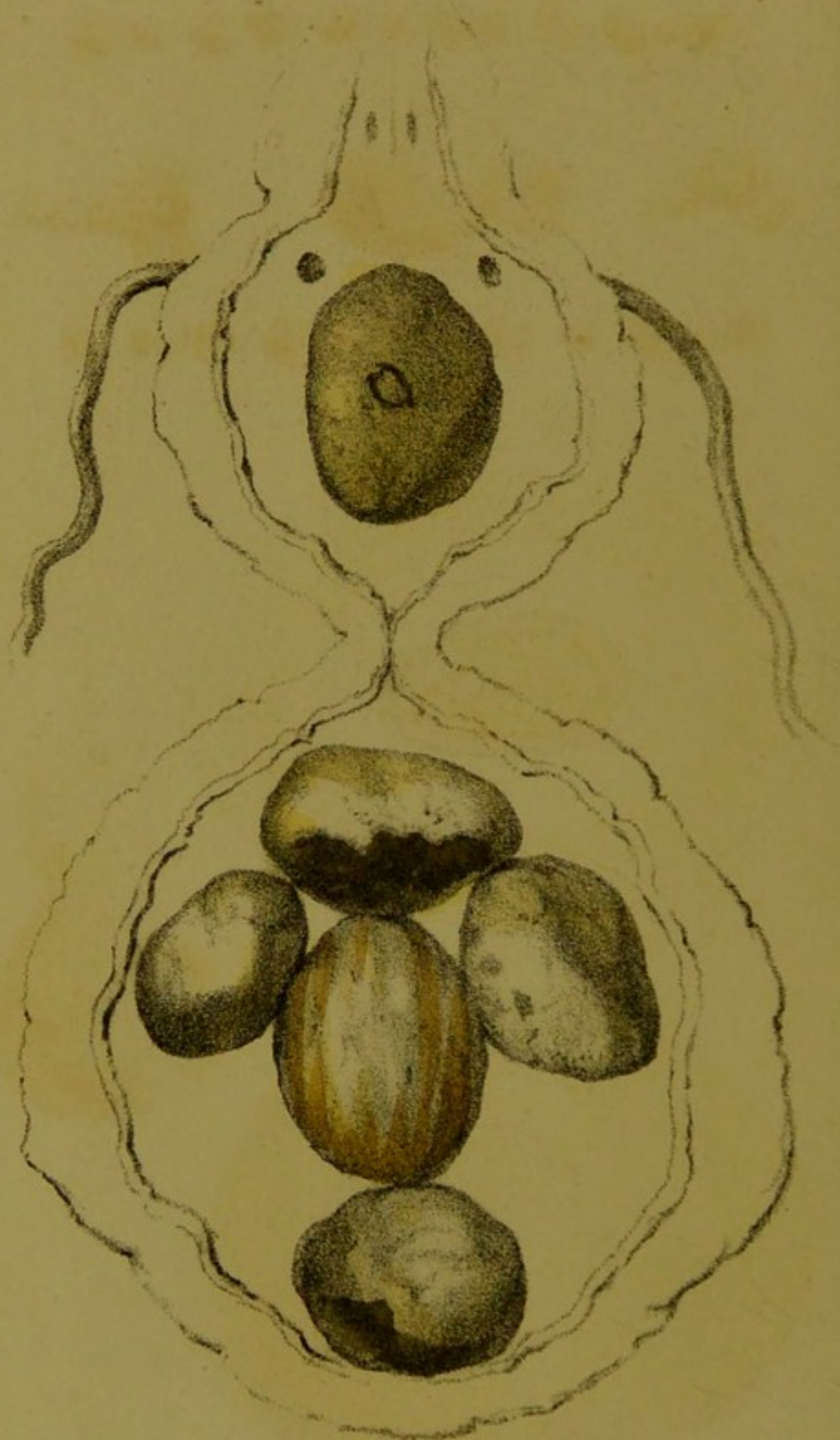
9







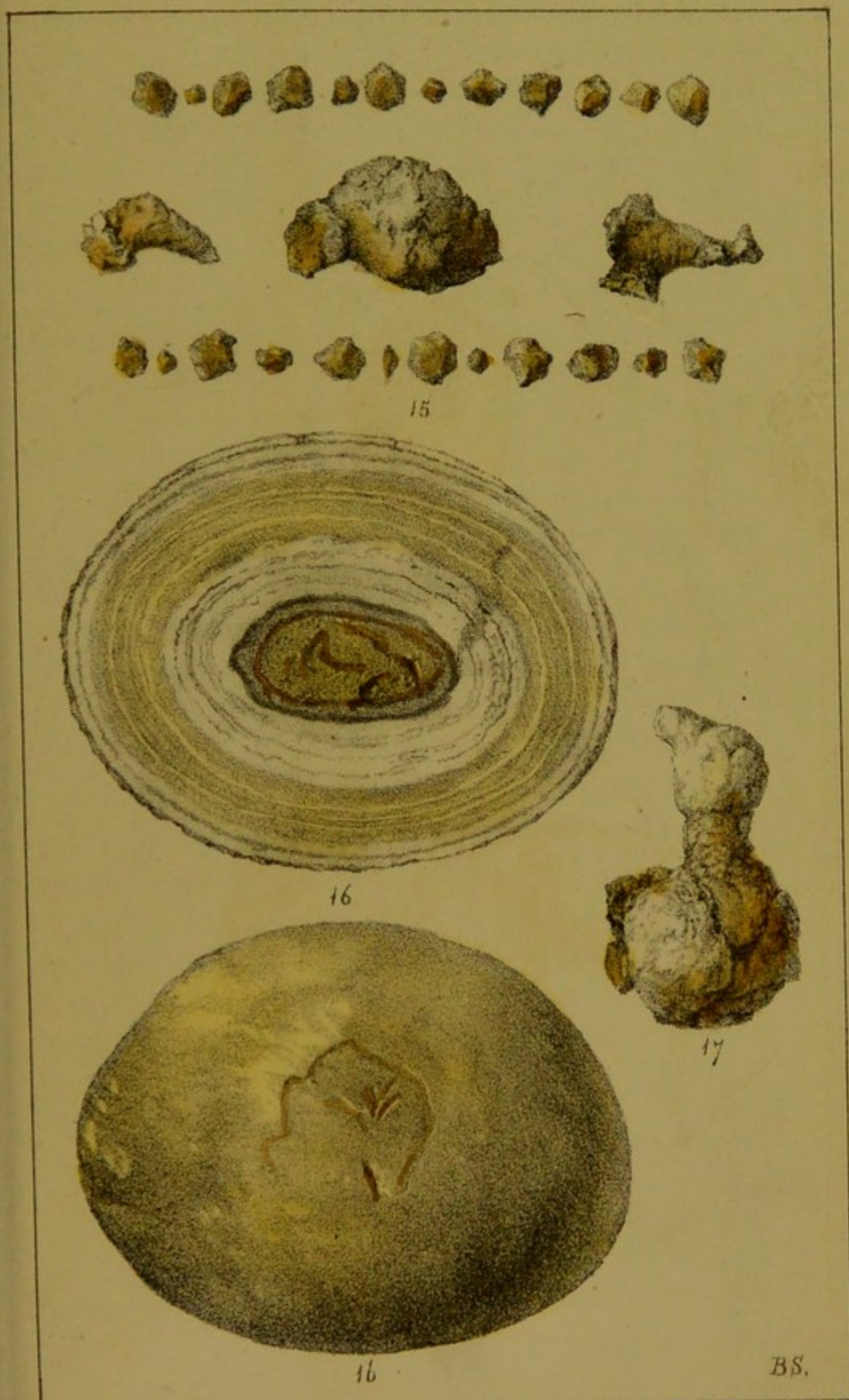




14

BS.







might have readily followed the first, but for the nature  
of the surface. The irregularities of the  
first of the elements in the composition of the  
crystals indicate a different origin. In all the  
minerals there is no instance of a difference between  
any two crystals which is not in the direction of the  
same line.

No. 6. This is a small crystal of the same  
probably taken from the same source. It is  
among the minerals the form of which is not  
and with which the external coating is very  
different.

No. 7, 8, and 9 are on the right hand, and 10, 11,  
12, 13 on the left. Having been numbered separately  
upon the same.

No. 7 is remarkable for being an aggregation of  
particles without any regular arrangement. It is a mass  
of crystals of the same mineral, but with irregular  
The lines which follow the form of the

No. 8 is a crystal in the shape of a double prism  
a good one, clear. It is covered with a  
magnesian phosphate and phosphate of lime.

No. 9. The history of this crystal is in  
entirely different. The donor stated that it  
was taken from a human subject by the physician  
who had only been told to let the patient have some  
thing to eat, who gave it to him. The history is  
undoubtedly a common one; the crystal is rather  
more of the same in form, but the history is different.  
very large and regular. It is not unlike that of a  
crystal from a watered glass, or made by any  
artificial means. In fact, it is a crystal, but it  
differs from the others in having a double prism

might have readily followed the first, but for the negligence of the surgeon:—An instructive lesson. The fact of the difference in the component parts of the calculi affords matter for speculation. In all the museum there is no instance of a difference between any two calculi which existed in the bladder at the same time.

No. 6. Of this, a small oxalate of lime calculus, probably fallen from the kidney, eccentrically placed, forms the nucleus; the layers are alternately O. of L. and uric acid; the external coating is earthy phosphate.

No. 7, 8, and 9, are on the right hand, and 10, 11, 12, 13, on the left, having been numbered wrongly upon the stone.

No. 7 is remarkable for being an aggregation of particles, without any apparent nucleus; it is a mass of oxalate of lime intermixed with earthy phosphates. The lines which inclose the mass are O. of L.

No. 8 is a pin found in the bladder of a female upon a post mort. exam. It is coated with ammoniaco-magnesian phosphate and phosphate of lime.

No. 9. The history of this curious calculus is unfortunately obscure. The donor assured me that it was taken from a human subject by the operation; but he had only been told so by the surgeon, some time since deceased, who gave it to him. The nucleus is undoubtedly a common cinder; the coating is carbonate of lime; the surface is beautifully tuberculated, very hard and compact. I do not believe that it is a production from a watering place, or made by any artificial means. In fact, in my judgment, its appearance attests the fact of its having been in a bladder; but I



have great doubts about its having been in a human one. An account of it was published in *Tillock's Journal*, London, 1817 ; vol. 29, page 188. Of the cinder we may quote,—

“ The thing itself is neither rich nor rare ;  
The wonder only is—how it came there !”

No. 10 is remarkable for its shape. It is entirely uric acid.

No. 11 is a calculus made up of four distinct portions, easily separable. A man, in the agonies of retained urine, thrust down the urethra, in the hope of forming a passage for the water, a piece of stick, which ultimately found its way into the bladder and became divided into four portions. Around each was deposited fusible matter, as is usual with foreign bodies so circumstanced. The calculus was extracted by the operation.

No. 12 is the tooth of some animal. It formed the nucleus of the underplaced calculus.

No. 13. This contained the above tooth. The history of the calculus is not known. It has the appearance of ivory, and gave the same soft, greasy *feel* under the action of the saw. It is ammoniaco magnesian phosphate, with a portion of phosphate of lime. It is extremely fusible, running immediately into a white enamel under the action of a blow pipe.

No. 14. From a subject aged 64, cut by Mr. Richard Smith. The single calculus came readily away, and there appeared no reason why the patient should not do well. He died, however, on the third day, and, upon examination, the hour-glass contraction of the bladder was discovered, with the incarceration of five other calculi. All the six are pure uric acid.



No. 15. Twenty seven calculi. The upper row were voided through the urethra; the three middle ones and the lower row were removed by an operation. Their appearance is far from ordinary;—they are composed entirely of *carbonate* of lime. As Dr. Marcet, in his book, denied that this substance had been found in the human bladder, I sent one of them to him. His answer was—"I confess that when I looked at the calculus, I thought that you had been deceived, fully expecting to find it oxalate of lime; but, upon examination, I must acknowledge that you are right. I am sorry that I was not aware of your collection of calculi before my publication came out. I shall communicate with you should a second edition be demanded. I should be happy to god-father your paper, if I remained in England."—The Doctor went abroad soon after, and died. I am not aware that there is elsewhere so numerous and well authenticated a set as this, although the presence of that substance in several instances, as a component part, cannot be now denied. Calculi in pigs appear to be invariably carbonate of lime: there are in the museum at least a hundred specimens, the largest of which weighs an ounce and a half.

No. 16. A specimen of alternation, between earthy phosphates and oxalate of lime. It weighs five ounces. The latter forms the nucleus. The man is yet alive, and was cut at the Infirmary forty years ago; has a large family, and never suffered the least inconvenience after the operation.

No. 17 is indebted to its shape for having been lithographed.

R. S.



