The following table gives the quantities used in effecting this :

	Quantity.
October 18th, temp. of room 17° C., solution strength 5%, 14.0 c.c.	
" 19th, " 17° C., " " 18.0 c.c.	
" 19th, " 17.5° C., " " 14.0 c.c.	
" 20th, " 18° C., " " 15.0 c.c.	
" 20th, " 17.5° C., " " 12.0 c.c.	
" 21st, " 16° C., " " 14.0 c.c.	
	85.0 c.c.

Average quantity = 14.16 c.c. = 0.708 grammes = 10.92 grains.

The effect on spontaneous action was, as compared with chloral, but slightly marked; in the end stages, the beats grew much less frequent, it is true, but, on the whole, the effect was but slight.

The contractile power of the muscular tissue was ultimately abolished; but, in this process, two points are noteworthy. The first, that it was not till the later stages that this effect became pronounced: thus, with an average toxic dose of 14.16 c.c., the effect on the height of the trace was not marked till 9 c.c., or more, had been added, the subsequent effect being frequently somewhat sudden; the second, that a primary stage of increased force of beat preceded the decline. With a ventricle emptying itself at the start, it is not possible to show this, since, though it empty itself more rapidly and more forcibly, it still does not do more than empty itself, and the height of the trace remains unaltered. It was possible, however, in some of the cases, where contraction was not to the full at the commencement, to demonstrate a distinct, though slight, increase in the height of the beat.

The duration of the beat was in every case increased, and the increased breadth of trace was a constant and early manifestation; it, as a rule, went on increasing somewhat up to the very end.

The period of latency was very greatly increased, and this before any notable effect on the height of the trace was observable. In like manner, the "period of diminished excitability" was very considerably increased, and this also whilst the height of the trace was apparently unaffected. The effect of continuous faradisation was quite in accordance with these results, the excitability, or readiness of the heart to respond to this mode of stimulation, lessening markedly as the dose of morphia increased.

In contradistinction to the chloral phenomenon of "piling up," no such effect was witnessed with morphia; indeed, the excitability of the muscle was so much lowered, that a stimulus thrown in at the moment of completed systole was quite ineffectual. This lowered excitability extended, moreover, to the period of diastole, and even beyond this to a greater or less extent into the period of pause; so that, when the toxic effect was well marked, a stimulus thrown in early, after a contraction had been completed, remained without effect. A yet more interesting phenomenon was observed, viz., that if, subsequent to a preceding contraction, such early stimulation did cause response, this was comparatively feeble; whilst, after the lapse of a longer interval, the same stimulus caused full contraction. Normally, *i.e.*, with the undrugged heart, a stimulus, if not effective during the period of systole, is effective during a part, if not the whole, of the period of diastole; and, during any part of the pause following a contraction, an effective stimulus will always yield a full contraction; but here, under the influence of morphia, we see that the change, whatever its nature, occurring when the phenomenon of contractility is manifested, is one requiring the element *time* for a change in an opposite direction, *i.e.*, for the restoration of the state preceding the moment of contraction. Normally, then, the processes of change and counterchange are too rapid to admit of demonstration; but in morphia we have a drug which, by lengthening out the process of counterchange, enables us to demonstrate the existence of these processes.

With regard to the effects of dilution, in two cases good recovery followed replacement of the poisoned blood by 100 c.c. fresh blood; the recovery was, however, a slow one as compared, for instance, with the rapid recovery which is observed when a heart poisoned with a potassium salt is washed out with fresh blood-mixture. In one case, simple dilution of the poisoned fluid with an equal bulk of saline, 0.75 per cent. yielded fair recovery, but the recovery here was likewise very slow, requiring about twenty minutes. Of the two cases where fresh blood was substituted for the poisoned, in one, faint recovery occurred at the end of one revolution of the cylinder (8 to 9 minutes); at the end of another revolution, the contractions were good. In the other case, dilution was first tried, and this being ineffectual, substitution was made; in about 10 to 11 minutes from the moment of substitution, there was good recovery.

[To be continued.]

NOTES ON A CASE OF FORCIBLE REMOVAL OF THE UTERUS.

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A NOTE in the JOURNAL (page 389) draws attention to a case which occurred in 1845, where the uterus, the lower part of the small intestines, and the greater part of the large intestine were torn away at a labour. The notes of the following case, where the uterus with some of its appendages was torn away by a midwife, may be interesting.

Mrs. B., aged 29, in delicate health, had her first child about five years ago; the infant was healthy. Then she had two miscarriages, probably due to syphilis; then, about two years ago, a living child, which showed signs of syphilis. She was expecting her confinement about the end of November. On October 26th, 1882, I was sent for to see the patient, who lived about four miles in the country. She stated that, without any known cause, she was suddenly taken with "labour-pains," and had a great deal of "loss." The pains had ceased when I saw her, and she was about the house, but stated that there was still some hæmorrhage going on. On examination, I found the os uteri sufficiently open to admit the tip of the forefinger, and there was a slight amount of hæmorrhage going on. There being no signs of imminent labour, and as she did not expect to be confined for a month, I gave an opiate, told her to remain quiet, and to send at once if anything came on. On October 28th (two days afterwards) I received a message that Mrs. B. died during the night, and that only a neighbour and the village midwife were present. I went to the place, calling upon the midwife on my way to learn particulars. She said that she found Mrs. B. fainting, and with great loss, that the child was born when she got there, but that there was a "false conception," which came away after the child.

I then proceeded to the patient's house, and saw the woman who was present. She told me that, after my visit, on the 26th, the loss stopped, and that, though Mrs. B. seemed very faint and weak, there appeared to be nothing wrong with her. About midnight on the 27th, severe labour-pains came on, and, before she could get any one there, the child was born. There was no one in the house at the time, but she sent the husband as soon as possible for the midwife. She would say nothing further than that soon after the arrival of the midwife, Mrs. B. died suddenly. Mr. Beecroft, a retired surgeon living in the village, was sent for by the midwife, but he did not arrive until after Mrs. B.'s death.

The woman had saved the "after-birth, and what came away with it." On examining this I found, in a basin full of blood and water, the placenta, which was much broken up on its uterine (attached) surface, and had apparently been torn on removal. Besides this there was a substance which proved to be the inverted uterus. On re-inverting this, the whole uterus was found to be torn away, the rupture passing through the vaginal wall in front, about an inch from its reflexion on to the cervix uteri. Behind, it was torn away at the reflexion of the peritoneum from the uterine walls. The broad ligaments were torn, the rupture passing through one ovary, the other ovary was still attached to the uterus. The uterus appeared to be healthy, whilst the ovaries were normal. The inner surface of the uterus, from which the placenta had been detached, was ragged, and small portions of the placenta were still adherent. Unfortunately, the specimen was not preserved.

With the assistance of Dr. W. E. Paley, and Dr. Kirkwood, I made a *post mortem* examination of the body on October 30th. The remainder of the left ovary was in its proper place, the organ being torn in halves. On its surface was a small adherent blood-clot. The uterus, with the rest of its appendages was missing. Nothing else abnormal was found.

The history obtained from the two women at the inquest was very unsatisfactory, and nothing further could be learnt from either of them. They denied using much force, and would say nothing about anything coming after the child. The midwife stated that Mrs. B. was fainting when she arrived; that she cut the cord, took away the child and removed the after-birth, which came away quite easily.

An open verdict was returned.

In addition to the case mentioned in the JOURNAL, Neale's *Digest* (1868-1) mentions two other cases, to be found in the *British and Foreign Med.-Chir. Review*, vol. i, 1856, p. 535, and in the *Medical Times and Gazette*, vol. ii, 1863, p. 728.