6. Gout is probably always preceded by some affection of the kidneys, functional or organic, which interferes with the proper excretion of uric acid. The probable seat of the kidney affection giving rise to gout is in the epithelium of the convoluted tubes.

7. In certain blood diseases and disorders accompanied by leucocytosis uric acid is formed within the system from nuclein. Under such circumstances it passes at once into the blood and is rapidly eliminated by the kidneys.

8. The solubility of uric acid in the blood is not affected by a diminished alkalinity of the blood produced by the addition of organic acids.

9. The deposition of sodium biurate is not accelerated by a diminution of the alkalinity of the blood.

10. An increased alkalinity of the blood does not increase the solubility of deposits of sodium biurate.

11. The saline constituents of vegetables exercise a remarkable inhibitory power over the decomposition of sodium quadriurate.

12. The solubility of sodium biurate in the blood is increased by the presence of the saline constituents of vegetables.

13. The solubility of sodium biurate in the blood is diminished by the presence of the saline constituents of meat.

14. The gout-inducing properties of certain wines are not due to their acidity. Probably they owe their gout-inducing action to the effect they exercise on the metabolism of the liver.

REFERENCES.

¹ *Maladies des Vieillards et les Maladies Chroniques*, 1874. ² *Med. Soc. Trans.*, vol. xiv, p. 88. ³ Croonian Lectures, BRITISH MEDICAL JOURNAL, i, 18:6. ⁴ *Deut. med. Woch.*, 1895, xxi, p. 655. ⁵ *Loc. cit.*

A CASE OF ANGINA PECTORIS TREATED BY ERYTHROL TETRANITRATE, WITH MARKED BENEFIT.

By J. B. BRADBURY, M.D., F.R.C.P.,

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E. G., aged 75, a medical man, twelve months ago began to suffer from angina pectoris. As no organic lesion was discovered the affection was declared to be neurotic, and treatment with digitalis, strophanthus, quinine, strychnine (hypodermically and by the mouth), cactina, arsenic, etc., successively, was tried without avail. The patient grew feeble, and the seizures became more frequent. The symptoms were pain in the sternum, elbows, and fingers; quick, painful, jerky respiration followed, unless the attack was cut short by nitroglycerine or inhalation of nitrite of amyl, by absolute agony, and an indistinguishable pulse. A fiftieth of a grain of nitroglycerine had always to be taken to enable him to dress, undress, creep out into the sunshine, etc., and seven or eight such doses were required in the twenty-four hours. The attacks were induced not only by slight physical exertion but also by mental effort (such as the writing of a letter), and they would even occur during perfect rest or during sleep. In the intervals of the attacks the pulse was 70, soft, and easily compressible. After taking a tabloid of nitroglycerine ($\frac{1}{10}$ gr.) the usual effects—throbbing at the temples, a fuller radial pulse, etc.—were felt, followed in two to three minutes by entire cessation of the pain, and return of normal breathing.

Erythrol tetranitrate (1-grain doses) was now suggested. Without my knowledge Dr. G. undertook some observations on himself, and very kindly afterwards sent me the following account: "Before taking the tetranitrate of erythrol at stated intervals I thought it would be instructive to ascertain by experiment the length of time the agent would afford immunity from the seizures of angina. It was taken, therefore, only when attacks were imminent, as known by pain supervening in the sternum, elbows, and fingers, before the breathing had become distressed or the point of agony approached. In this latter emergency nothing short of the inhalation of nitrite of amyl or the rapid mastication of nitroglycerine tabloids will lower arterial tension and afford relief. It would seem in my case that, notwithstanding the previously long-continued use of trinitrine, this tension was

more quickly lowered and longer relieved than is shown in your diagram (Fig. 10) in the Bradshaw Lecture.¹ Certainly in ten minutes I felt that the progress of the attack was arrested, and, as the figures below show, the interval of ease was more prolonged. The following table introduces the last three or four days' use of nitroglycerine by way of contrast. The system appeared to have become so insensitive to its action that $\frac{1}{15}$ gr. three times a day was now practically inert.

NITROGLYCERINE.

(In doses of $\frac{1}{10}$ gr. unless otherwise indicated; only taken on the approach of, or during, a seizure.)

February 28th, at 6, 8, 12, 3 ($\frac{1}{10}$ gr.), 7 ($\frac{1}{10}$ gr.), 10 ($\frac{1}{10}$ gr.)

March 1st, at 6, 8, 11 ($\frac{1}{10}$ gr.), 12, 4, 7, 9, 11.

" 2nd, at 3, 6, 8, 11, 1, 3, 5, 7, 9, 11.

" 3rd, at 1 ($\frac{1}{10}$ gr.), 8 (here erythrol tetranitrate arrived).

ERYTHROL TETRANITRATE.

(One grain was taken at each dose except where otherwise noted).

	Taken at	Repeated at	Interval.
March 3rd (cont.)	10 A.M.	7 P.M.	9 hours.
" 4th	6 A.M.	1 P.M. and 9 P.M.	—
" 5th	7 A.M. ($\frac{1}{10}$ gr.)	12 P.M. ($\frac{1}{10}$ gr.), 4 P.M. ($\frac{1}{10}$ gr.), 8 P.M.	—
" 6th	7 A.M.	6 P.M.	11 hours.
" 7th	6 A.M.	6 P.M.	12 hours.
" 8th	6 A.M.	1 P.M.	7 hours.

"Life being now rendered infinitely more tolerable and the potency of the remedy abundantly demonstrated, I determined upon taking it steadily, at about eight hours' interval, as a prophylactic. For three days there was immunity from attacks, although some weariness and oppression at the chest were wont to steal on after the lapse of six or seven hours from taking the tablets. I am now taking them four times in the twenty-four hours, and am sanguine enough to hope to keep the foe at bay altogether."

This case needs little comment. Dr. G. is right in stating that the pulse tension is more quickly lowered than is shown in the diagram to which he refers. The initial fall depends on the mode of administration. If the drug is given in spirit and water (1 grain in 1 drachm of alcohol and 7 drachms of water) the tension begins to fall in from two to three minutes; if given in a pill and swallowed the time is from twenty to forty minutes; if taken in tablet form and masticated the time lies somewhere between the two. The best form of administration is undoubtedly the tablet form. The alcoholic solution which I originally recommended sometimes irritates the stomach on account of the amount of alcohol it contains, and unless a rapid action is required it is better to give the drug in the solid form. Erythrol tetranitrate, however, was not introduced to replace amyl nitrite and nitroglycerine in cutting short attacks which have developed, but only to replace them in preventing the onset of the attacks. That it is capable of doing this much better than nitroglycerine, the best drug we had hitherto had for this purpose, I think the preceding case conclusively proves.

REFERENCE.

¹ BRITISH MEDICAL JOURNAL, November 16th, 1895, p. 1217.

THE DIRECTION OF ROTATION IN CEREBELLAR AFFECTIONS.

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In a paper on the Value of Experimental Evidence in the Diagnosis of Diseases of the Cerebellum, published in the BRITISH MEDICAL JOURNAL of May 18th, 1895, when discussing rotation as a symptom of cerebellar disease I stated that animals deprived of one lateral lobe of the cerebellum rotated away from the side of the lesion. I then went on to explain how a human subject with disease of one lateral lobe of the cerebellum would be expected to rotate in order to be in agreement with the experimental results which I had obtained.

The JOURNAL of the following week contained a letter from Dr. Bruce Ferguson, in which he expressed the opinion that I had fallen into an error of expression; and he gave his reasons for considering that the direction of the rotation which I had described was towards and not away from the side of the lesion. As it was impossible to reply to his criticisms in the space at my disposal for a letter, I promised to write a paper dealing more fully with the question than I