

# News, Notes and Queries

## SOME ROMAN MEDICINE

IT HAS long been recognized that in the Roman Empire great advances were made in medical knowledge, and that the best organized medical system in the ancient world was that of the Roman armed forces.<sup>1</sup> Recent work has provided interesting examples of Roman medicine as used by the army. For some time it has been known that some of the medicines and medical preparations prescribed by Celsus in his book 'On Medicine' (*De Medicina*) are chemically basically similar to modern ones. To promote discharge and clear a wound of sepsis, chamomile (*pyrethrum* or *herba salivaris*) was used for its volatile oil and tannin; as cleansers *auripigmentum*, which is golden trisulphide of arsenic, and *sandaraca*, which is red disulphide of arsenic; other preparations include thymol (*thymum*), which is akin to the phenol or carbolic acid that Lister used, knotgrass (*polygonum* or *herba sanguinalis*), rich in tannin and gallic acid, and silphium (*ammoniacum*), containing salicylic acid and a volatile oil. Other preparations were made from other sources; oxide of copper (*squama aeris*) was manufactured and used for cleansing wounds and clearing up ulcerations; papyrus was burnt and the resulting ashes, or caustic potash and soda, used as an erodent and caustic.<sup>2</sup> New finds confirm the high degree of medical and pharmaceutical knowledge.

The most important discoveries were made in the legionary hospital (*valetudinarium*) at Neuss (Novaesium), and are dated to the middle of the first century A.D.<sup>3</sup> Excavation in the early part of the present century revealed the details of the *valetudinarium* with its wards, reception-hall, operating theatre, medical and surgical instruments, and the hearths to sterilize them, as well as evidence for a special sick diet including eggs, oysters, and meat. Scientific analysis of plant remains discovered in excavation after the war in some of the wards shows the existence of at least four medicinal plants. Their uses can be found in the medical and pharmaceutical works of Pliny, Dioscorides, Hippocrates, and Celsus. Between one and two hundred examples of centaury (*Centaurium umbellatum Gilib*) were discovered. The ancient pharmacopoeias recommended its use for healing wounds, curing eye ailments, and pounded up and taken in wine as an antidote to snake-bite, or it could be applied in powdered form to the bite. Its value was also known in the Middle Ages, and nowadays it is popular with herbalists and is still sold in chemists' shops.

<sup>1</sup> I. A. Richmond, 'The Roman Army Medical Service', *Univ. Durham Med. Gaz.*, June, 1952, 2-6. J. Scarborough, 'Roman medicine and the Legions: a reconsideration', *Med. Hist.*, 1968, 12, 254-61, cites much of the earlier literature on the topic. I am unable to agree with some of Scarborough's conclusions; in 'The Medici of the Roman Armed Forces', *Epigraphische Studien*, 1969, 7, 79-95, I show that there were three types of *medicus*: another rank medical orderly, a medical officer on a short service commission, and a medical officer on a permanent commission, as well as various specialists (surgeon, oculist, consultant in internal ailments, veterinary surgeon etc.). I shall deal with the whole topic at greater length in a forthcoming paper 'The Roman Army Medical Service' *Saalburg Jahrbuch*, 1970, 27. See also: Vivian Nutton, 'Medicine and the Roman Army: a further reconsideration', *Med. Hist.*, 1969, 13, 260-70.

<sup>2</sup> All examples cited are in Richmond, loc. cit. The identifications are given in the introduction of the second volume of Celsus, *De Medicina*, translated by W. G. Spencer, in the Loeb series, I, 1935, II and III, 1938; in some cases more modern terms have been given.

<sup>3</sup> K.-H. Knörzer, 'Römerzeitliche Heilkräuter aus Novaesium (Neuss/Rh.)', *Sudhoffs Arch. Gesch. Med. Naturw.*, 1963, 47, 311-16; *Novaesium*, IV, 1969, forthcoming. I am grateful to Dr. Knörzer for further information by letters. For the earlier excavations, *Bonner Jahrbücher*, 1904, 111-12, especially 180-82 and 399-402.

### News, Notes and Queries

Some thirty-nine examples of henbane (*Hyoscyamus niger*) were found, the uses of which were recommended by all the ancients. It yields the alkaloids hyoscyamine and hyoscyne, which are isomeric but not identical with atropine, and which were and still are used as hypnotics and anodynes. Celsus recommends its use decocted in a draught to induce sleep; its seeds with those of the nettle were pounded and mixed with fat and applied as a local pain-killer, often employed with a hot water-bottle; its bark was used in a prescription for the relief of rheumatism, the leaves in an eye-salve, the juice for earache, and the root for toothache. Like all members of the nightshade family it was poisonous, and remedies against poisoning by it were prescribed. Half a dozen examples each of other medicinal plants were found inside the hospital and further examples outside.

St. John's wort (*Hypericum perforatum*) was used by the ancients in prescriptions for a pastille to expel stones from the bladder and in a famous antidote; it is still used as a drug for several complaints. The last example was plantain (*Plantago lanceolata*). Celsus recommends its juice for phthisis or haemorrhage, and mixed with blackberries as a beneficial, although disagreeable to the taste, medicament for dysentery; crushed and smeared on the body it was the best cure for elephantiasis. Plantain too was known in the Middle Ages and is still used by herbalists against ulcers and abscesses, and today is used in a tea to give relief against coughs. Near these finds were discovered the implements to grind them into powder and mix them into the prescriptions and medicines.

Various plants, such as vegetables and fruit, have been discovered inside the same hospital; they include the garden pea, lentil, and fig.<sup>4</sup> It is quite possible that these formed part of the sick diet for the convalescent troops, and all three are found in Celsus's third category of food, which he states to be the most suitable for the sick.<sup>5</sup> The pea and lentil were mostly turned into soup or porridge, which he puts into the same category. The fig, however, which at that time was not native to Germany and had in fact been specially imported, had several medicinal uses. Juicy ones cooked over charcoal were recommended for a cough, although Celsus warns that figs are not very digestible. The fig contains papain, a digestive ferment, and its sugar content, when applied externally to wounds and abscesses, promoted a thin discharge; this use is widely recommended by Celsus.<sup>6</sup> Pliny too recommends the use of the fig to clear up abscesses and the like, and for coughs and for sore throats, the juice as an antidote to insect and scorpion stings, the shoots and leaves as an antidote to rabies; as a food figs were particularly beneficial to a convalescent after a long illness.<sup>7</sup> The lentil was often used in skin-cleansers and exedents. A later probe, also in the *valetudinarium* and near the earlier finds, provided further examples of henbane and fig, and also fenugreek (*Trigonella foenum-graecum*). A decoction of this latter was used as a soothing enema and, when heated, as a poultice. Pliny gives prescriptions containing fenugreek and fig for pleurisy and pneumonia.<sup>8</sup>

<sup>4</sup> Analysed by Dr. Knörzer in *Bonner Jahrbücher*, 1962, 162, 260–65; 1964, 164, 202–14; 1966, 166, 433–43.

<sup>5</sup> *De Medicina*, II, 18, 1–13.

<sup>6</sup> *De Medicina*, IV, 10, 1 (cough); V, 5; V, 11; V, 12; V, 14; V, 28, 13B; II, 33, 1 (papain).

<sup>7</sup> Pliny, *N.H.*, 23, 117–30.

<sup>8</sup> Knörzer, loc. cit. (1966), 434–35. Pliny, *N.H.*, 24, 184–88.

### News, Notes and Queries

It seems highly probable that plant remains, which were discovered outside the limited excavations of the hospital but inside the fortress itself, which do in fact have medicinal properties, were used by the Romans for treatment of the sick.<sup>9</sup> Perhaps the most obvious examples of such finds are nightshade, enchanter's nightshade, tormentil, poppy, and vervain. The properties of the various nightshades are basically similar to those of henbane; the opium content of the poppy was used as a hypnotic and pain-killer, while vervains were mostly decocted and used as repressants. Flax was also discovered at Neuss, which would provide lint, and the linseed was used externally as a discutient and epispastic, to agglutinate wounds, and in a healing poultice. This hypothesis is strengthened by the many examples of the stamps for eye-salves found in forts, which give a prescription, although the actual ingredients themselves have not been discovered.<sup>10</sup> There is a reported instance of a bottle containing such plant remains.<sup>11</sup>

It is known that some of the medical specialists of the Roman armed forces invented prescriptions and remedies for various ailments. Galen, the leading Roman authority on medicine, mentions several. 'Antigonus, a distinguished doctor in camp', invented one for headaches:<sup>12</sup> 'Dried cleaned crushed bay 16 grms, scammony 16 grms, celery seed 32 grms, poppy juice 16 grms, saffron 32 grms, myrrh 16 grms, omphacium 16 grms, thyme 32 grms, vinegar as much as is necessary. Prepare and use as prescribed.'

Axius, who was the oculist (*medicus oclarius*) of the British Fleet, invented a cinnabar eye-salve, which merited an entry in Galen's works. Its basic ingredients are still used, and it probably derived its name from the colour vermilion, which the cinnabar (mercuric sulphide) used in it, would give:<sup>13</sup> 'Mercuric sulphide eye-salve of Axius, oculist of the British Fleet, for ulcered corners of the eye, bad inflammation of the eye, intense irritation, and chronic condition. Copper and zinc hydroxide 96 grms, zinc carbonate 96 grms, saffron 64 grms, pepper 64 grms, mercuric sulphide 64 grms, opium 48 grms, acacia 96 grms, rain-water as much as is necessary.'

Eye troubles were quite common in the north-western part of the Roman Empire, but cures were available and used by the army to keep the troops in good physical condition. Skilful and prompt treatment meant that normally illnesses would be of short duration. If convalescence were needed, the invalids would be sent to the coast to recuperate or to such military spas as Bath, Aachen, Baden Baden, with their hot springs and curative waters.<sup>14</sup> Some treatment could always be given in the camp; Pliny prescribes a use of oil of radishes (*oleum raphaninum*):<sup>15</sup> 'Oil of radishes removes pthiriasis caused by long illness and smoothes roughness of the skin on the face.' A fragmentary survey from Egypt dated to A.D. 199 lists among items 'for supplying our most noble soldiers with necessities' oil of radishes, while private

<sup>9</sup> Knörzer, loc. cit. (1964), 205, 208. Note that St. John's wort, henbane and plantain were discovered inside and outside the hospital.

<sup>10</sup> E. Espérandieu, *Signacula Medicorum Oculariorum*, 1904. A. Esser, 'Über die antiken Augenarztstempel signacula medicorum oculariorum', *Klin. Monatsbl. Augenheilk.*, 1957, 131, 4.

<sup>11</sup> Knörzer, loc. cit. (1964), 205, citing a letter from Prof. Dr. Heischkel-Artelt.

<sup>12</sup> 12, 557-58 (Kühn). The conversion to modern weights is on the basis *drachma*=*denarius*=*c.* 4 grammes.

<sup>13</sup> 12, 786 (Kühn).

<sup>14</sup> H. von Petrikovits, 'Bemerkungen zur Westgrenze der römischen Provinz Niedergermanien', *Studien zur europäischen Vor- und Frühgeschichte*, 1968, 115-19, especially 118.

<sup>15</sup> Pliny, *N.H.*, 23, 94. Cf. G. Lepage, *Animals Parasitic in Man*, 1957, 221-22.

### News, Notes and Queries

letters from individual soldiers ask for supplies of radish oil.<sup>16</sup> This medicament was quite effective, but Celsus gives a more complex one for the same complaint:<sup>17</sup> 'For this purpose soda-scum 0.33 grms, red disulphide of arsenic 0.33 grms, and black bryony berries 4 grms, are pounded up together, and equal quantities of old oil and vinegar are added, until it reaches the consistency of honey.'

The best styptic, according to Celsus, was *barbarum*. Its name ('foreign') shows that it came from outside the Graeco-Roman world and was discovered during campaigns beyond the frontiers. 'The plaster *barbarum* black in colour' was used for deep flesh wounds, where the flow of blood could not be staunched by the application of a sponge squeezed out of cold water, vinegar, or wine. The prescription is:<sup>18</sup> 'Verdigris 48 grms, oxide of lead 80 grms, aluminium sulphate and silicate, dried pitch, dried pitch resin, 4 grms each, to which is added oil and vinegar 250 ccs each.'

In the legionary hospital at Budapest (Aquincum) were discovered a pair of scales, mixing bowls, spoons, and a medicine-chest with compartments, for making and storing such complex preparations.<sup>19</sup> At Corbridge (Corstopitum) a chest containing old iron and bronze was buried underneath a ward of the hospital towards the end of the first century A.D.; it seems that the purpose was to develop iron-rust (*ferrugo* or *robigo*) and verdigris (*aerugo*), which were used by the doctors to dry and cleanse wounds.<sup>20</sup> In the early seventeenth century the great antiquarian William Camden quoted the firm conviction of local experts near Walltown on Hadrian's Wall:<sup>21</sup>

The fabulous tales of the common people concerning this wall, I doe wittingly and willingly overpasse. Yet this one thing, which I was enformed of by men of good credit, I will not conceale from the reader. There continueth a settled perswasion among a great part of the people there about, and the same received by tradition, That the Roman souldiers of the marches did plant heere every where in old time for their use, certaine medicinable hearbs, for to cure wounds: whence it is that some Emperick practitioners of Chirurgery in Scotland, flock hither every yeere in the beginning of summer, to gather such Simples and wound herbes; the vertue whereof they highly commend as found by long experience, and to be of singular efficacy.

The only plant that can now be identified is chive (*Allium schoenoprasum*), which is in fact very rare in England.

Evidence has also been discovered for finds no less remarkable from other parts of the Empire. A balanced diet, including a plentiful supply of fresh fruit and vegetables, ensured that the Roman soldiers were free of the risk of scurvy. There is only one recorded example of a Roman army suffering from this complaint. In A.D. 16 the troops of Germanicus, who had been operating in the marshes and forests of northern Germany, were returning to the Rhine by sea along the coast of Holland. Pliny gives the details in the section of his *Natural History* devoted to pharmacopoeia:<sup>22</sup>

<sup>16</sup> *PSI* 683; *P. Mich.* 481; *O. Guéraud* 3 and 21. It was also a substitute for olive oil.

<sup>17</sup> *De Medicina*, VI, 6, 15.

<sup>18</sup> *De Medicina*, V, 19, 1B, Cf. V, 26, 23F.

<sup>19</sup> J. Szilágyi, *Aquincum*, 1956, 69, and taf I opposite 64.

<sup>20</sup> R. W. Davies, 'A note on the hoard of Roman equipment buried at Corbridge', *Durham Univ. J.*, forthcoming.

<sup>21</sup> W. Camden, *Britannia* (second edition), translated by R. Gough, 1806, III, 470. J. Collingwood Bruce, *Handbook to the Roman Wall* (12th ed.), rev. by I. A. Richmond, 1966, 150–51. Cf. G. Benthall and J. D. Hooker, *Handbook of the British Flora* (7th ed.), rev. by A. B. Rendle, 1954, 482–83.

<sup>22</sup> Pliny, *N.H.*, 25, 20–21.

### News, Notes and Queries

It is not only beasts that are guilty of causing injury, but at times waters too and regions are responsible. When Germanicus Caesar had moved his camp across the Rhine in a maritime district of Germany, there was only one spring of fresh water. If this was drunk, within two years the teeth fell out and the use of the knee-joints failed. Doctors called these ailments *stomache* [scurvy of the gums] and *scelotyrbē* [disorder or paralysis of the legs]. A remedy was discovered in the plant called *britannica*, which is good not only for the sinews and diseases of the mouth, but also for the relief of quinsy and snakebite. It has dark, longish leaves, and a dark root. Its juice is extracted even from the root. They call the blossom *vibones*; if it is gathered before thunder is heard, and swallowed, it makes one free from the fear of quinsy for a whole year. It was pointed out by the Frisians, at that time a loyal tribe, in whose territory the Roman camp was. I wonder why the plant was so called, unless perhaps they called it *britannica*, because it is bordering on the British Ocean, a neighbour, as it were. It is certain that the plant was not so named because it grew abundantly in Britain, which was then independent.

His account well illustrates the limits of the empirical medicine employed in the ancient world. It was the unusual absence of supplies of vitamin C, not the source of the water supply, that caused the scurvy. The plant, which is probably the grainless dock (*rumex aquaticus*) could be used to form an antiscorbutic drug.<sup>23</sup> Pliny gives a surprising amount of detail about this plant, and he may well have come across the details when he was a military officer in Germany some decades later. There is confirmation that this plant and a preparation from it were used. At the Roman fort of Haltern on the River Lippe the lid of a round box for containing medicine was discovered; it was inscribed 'extract of the root of grainless dock' (*e radice britannica*).<sup>24</sup> The Romans thus had the means of preventing and curing scurvy, as well as a good antidote to snake-bite and quinsy.

A common way of taking a cure was in wine; special medicinal wines were often sent in bulk a considerable distance. Barrels, which were later re-used as linings for wells at the legionary fortress at Aquincum, contained several examples of a stamp with the legend 'duty-free for the account of the hospital of the Second Support Legion' (*immune in r[ationem] valetudinarii leg[ionis] II Adi[utricis]*). This shows that special medicinal wine was imported to the fortress from outside the customs zone, but as it was for the military hospital, no duty charges were imposed. Large quantities of this wine were sent; there are two definite examples and probably a third of barrels with this inscription, each of which was capable of holding about 678 litres of wine weighing some 678 kilograms. The examples date to the second half of the second century.<sup>25</sup> An *amphora* containing a special medicinal wine was sent to the legionary fortress of Carpova on the south bank of the Firth of Tay in the early third century. Dioscorides, who at an earlier stage in his career had been an army doctor, gives a prescription for a wine flavoured with horehound (*prasion*), which was beneficial for complaints of the chest, and Celsus and Pliny both recommend the use of horehound to cure coughs. It is interesting to see that the same prescription recommended by a distinguished military doctor was still being used one and a half centuries later. Although the legionaries occupied the site for only about three years, the rigours of the climate and latitude were sufficient to make the military authorities arrange for

<sup>23</sup> I have followed the identification of W. H. S. Jones in his translation in the Loeb series, VII, 1956, *sv*, contra the tentative suggestions of F. Drexel and I. A. Richmond.

<sup>24</sup> *Germania*, 1928, 12, 70, Abb. 1, 75, 172–73, Abb. 1. *Natur und Museum*, Band 58, Heft 8, August, 1928, 379–84.

<sup>25</sup> *Bayerische Vorgeschichtsblätter*, 1959, 24, 6–29, especially 23–24 (nos. 1 and 6 and probably 5). and 29.

supplies of this wine, which presumably came from the Continent.<sup>26</sup> At Caerleon (Isca Silurum), the base of the Second Augustan Legion (*legio II Augusta*), was discovered an *amphora*, which had contained Aminean wine, a high quality Italian white wine that kept well.<sup>27</sup> Celsus prescribes two uses for this wine. Firstly, as a cure for diarrhoea one should eat half a pound of bread soaked in neat Aminean wine, then something roasted (particularly poultry), then drink the Aminean wine mixed with rain-water. Alternatively, boil half a pound of wheat in dry Aminean wine, eat the wheat on an empty stomach, then drink the wine; Celsus recommends this as a very good remedy.<sup>28</sup> The second major use was to cure an ailment, the symptoms of which were as follows:<sup>29</sup>

Another, although not very different ailment, is *gravedo*. This blocks up the nostrils, makes the voice hoarse, and causes a dry cough. In it the saliva is salty, there is a ringing in the ears, the veins in the head throb, and the urine is turbid . . . These affects tend to be of short duration, but if neglected, may last a long time. None is fatal, except that which causes ulcers in the lung.

His advice is to take sensible precautions, although the normal diet can be kept, and the ailment will generally clear up in two to three days. However, if it has not cleared by the fourth day, 'the patient must take dry Aminean wine, then water for two days' after which he will be well enough to return to his normal diet. *Gravedo* is the common cold. Although medical and pharmaceutical knowledge has progressed greatly since the time of Celsus, there is still no cure for the common cold, but there must be many today, who would agree with the men of *legio II Augusta*, that doses of Aminean wine (or its modern equivalent) are the next best thing.

<sup>26</sup> *Journal of Roman Studies*, 1963, 53, 166, no. 51. Dioscorides, *De Mat Med.*, 5, 48. Celsus, *De Medicina*, IV, 10, 1–4; cf. III, 22, 14. Pliny, *N.H.*, 20, 241–42. Horehound was used until recently as a remedy for coughs.

<sup>27</sup> *Journal of Roman Studies*, 1966, 56, 224, no. 51.

<sup>28</sup> *De Medicina*, IV, 25, 3 and 9.

<sup>29</sup> *De Medicina*, IV, 5, 2–4.

R. W. DAVIES

---

## DR. RICHARD BRIGHT AND LAKE BALATON

RICHARD BRIGHT, M.D. (1789–1858) is chiefly remembered for his medical researches—principally his recognition of the disease now called after him, Bright's disease. But in addition to his medical achievements, he was a man of wide scientific interests, an accomplished linguist and very interested in foreign travel. When the approaching end of Napoleonic wars made continental travel again possible, Bright left his studies to go abroad once more. He journeyed through Holland, Belgium and Germany, arriving at Vienna in the winter of 1814–15. Here he attended the famous Vienna School of Medicine and showed considerable interest in the Congress of Vienna then in progress. Between the sessions of the Congress there was a pause of over six months, and Richard Bright used this period for extensive journeys into neighbouring Hungary. Whilst at Vienna, he was introduced to a number of young Hungarians studying there, one of whom appears to have been László Festetics, son of George Festetics, one of the leading statesmen of the 'reform' period. Letters of introduction