

# Quackery versus rational therapeutics

*The useless versus the useful*

The WHO defines a drug as ‘any substance or product used or intended to be used to modify or explore physiological systems or pathological states for the benefit of the recipient’. It is implicit in this definition that drugs should be useful in both disease treatment and research, and yet for the most part this has only been a recent development. The purpose of this article is to try to give a brief outline of how the use of drugs has developed, and to highlight the importance of a rational understanding and application of therapeutics.

## Historical considerations

For many years, medical understanding of body function was largely limited to gross description, with disease considered the result of ‘the evil influence of an enemy, a demon, a god or even an animal’.<sup>1</sup> Subsequent to this, disease was believed to represent a disequilibrium between the four bodily fluids—blood, phlegm, cholera or yellow bile, and melancholy or black bile, which made up the ‘humour’. It was this latter concept of disease that led to the widespread use of such treatments as vomiting, purging and blistering, and it is interesting to note that even at this time the apparent success of these treatments was used to support current medical beliefs.

Consider one example published in *Philosophical Transactions Of The Royal Society* in 1667, concerning the supposed value of the emetic Ipecac as, ‘an infallible Medi-



cine for curing Dysenteries by disposing ... by Degrees for Purging, and to sweeten and correct the sharp ... Humours, which are the Nature of Aquatoritis [Latin *strong water*], and the Spirit of Nitre [nitric acid], and which eat away the Tunicles of the Intestines, and the Mouths of the Vessels'.<sup>2</sup> A similar report concerned a delusion on a ship at sea, ‘He began to admire the fine Woods, which he fancied to be near us. A Vomit of (induced by) Antimony...and...all those Imaginations vanished’.

This ignorance concerning drugs and disease was reflected in contemporary comments about physicians. John Webster in *The Duchess of Malfi* (1613), for instance, wrote:

She'll use some prepared antidote of her own,  
Lest the physician should re-poison her

Maximilianus Urentius of Ghent wrote in the same period:

How differs, I pray, the Physician's part  
From his brother, the Surgeon's healing art?  
I tell you, the one by his drugs and pills,  
By his knife the other, the churchyard fills.

Finally Voltaire (1694-1778) stated that a Physician ‘is one who pours drugs he knows little into a body of which he knows less.’

## Emergence of quackery

Partly as a result of these beliefs, advertisements for quack medicines became commonplace from the late 17th century onwards, claiming remarkable new discoveries and unfailing success, but most were noticeably secretive regarding the components and mechanisms of action of these medicines. Some illustrative examples of these advertisements have been reproduced for the reader's entertainment.

Two reports published by the British Medical Association in 1908 and 1912 heavily criticised these ‘wonder cures’, and provided analyses of remedies available at the time in an attempt to, ‘contrast the claims and exuberant boasts of the vendors ... with the banal ingredients.’<sup>3,4</sup> One example was Rice's treatment for ‘rupture’ (hernia), the advertised description of which read as follows:

‘Do you see this bricklayer closing up the opening in that wall? That is the way to cure *rupture*, by filling in the opening with new and stronger tissue.

A rupture is simply a break in a wall- the wall of *muscle* that protects the bowels. It is just as easy to cure a wound or break in *this* muscle as one in the arm or hand.

We give you a Developing Lymphol to apply on the rupture opening. This penetrates *through* the skin to the edges of the opening and removes the *hard ring* which has formed around the break.

Then the *healing* process begins. Nature, no longer handicapped by the protruding bowel and hardened ring at the opening, and stimulated by the action of the Lymphol, throws out *her* supply of lymph, and the opening is again filled with *new muscle*.

Isn't this simple? Isn't it *reasonable*?'

Despite these remarkable claims, Rice's treatment comprised nothing more than tincture of capsicum, oil of peppermint, and oil of spearmint. Other typical 'medications' of this time included soothing syrups containing opium, face preparations containing arsenic and zinc oxide, stomach bitters made with whiskey, health restorers containing narcotics, and specifics for rheumatism containing red pepper, licorice and sugar.<sup>5</sup> As one might expect, these treatments were generally ineffective, save for a placebo effect, and in some cases could be dangerous.

## Quackery versus rational therapeutics

Not all early treatment rationale were inconsistent with modern concepts of disease, however, such as one treatment proposed for dropsy in 1667, 2 'Take Morfus Diaboli, and put it over the fire in a dry Kettle, that it may wet only with its own Juice, and of this to apply a Quantity to the Belly and Reins of the Patient, covering him up warm, to so provoke sweat; which will come away in great quantity.' In this case, the 'drug' is likely to have been irrelevant to the treatment's efficacy, which probably resulted from the induced sweating, and consequent fluid load reduction.

As regards true 'rationalism' in the use of drugs, one of the earliest and best examples is digitalis. The term digitalis (Latin *digitus*,

**Drunkards Cured Secretly.**

**EUCRASY.**



This harmless and tasteless remedy is given in Tea, Coffee, Food, etc., to cure Drunkards. Any wife, sister, daughter, or mother can cure her loved one of this fearful and degrading habit by this new, simple remedy, as did Mrs. Scott, who writes: "Oh! how happy I am that my husband has lost all his appetite for whisky; he now hates the sight of it, and refuses to drink, even when others offer it to him. Your remedy is surely a blessing for drunkards."

Mrs. Scott's word of gratitude is only one of hundreds in possession of this company. Anyone who will send their name and address to

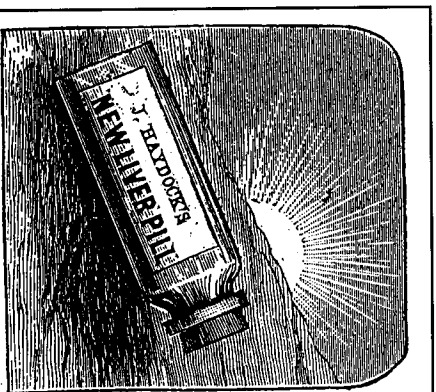
**THE EUCRASY COMPANY,**

62 Hunter Street, Sydney, will receive by mail, sealed, a free book about this wonderful remedy, and full instructions how to cure the drink habit.

finger) was first applied to the foxglove by the Tübingen botanist Leonhardt Fuchs in 1542,<sup>6</sup> but it was not until 1785 that digitalis was rigorously investigated by the Birmingham physician William Withering, who found a secret folk remedy to be composed of, 'twenty or more different herbs, but it was not difficult for one conversant in these subjects ... that the active herb could be no other than the Foxglove.'<sup>7</sup>

*Digitalis purpurea* had been used for many years to treat a wide variety of diseases, but Withering showed that it was ineffective in most of these, and even in dropsy was only effective in some types, such as 'hydrothorax'. Mechanistically, Withering noted that digitalis 'had a power over the motion of the heart to a degree yet unobserved in any other medicine' with a 'slow pulse, even as slow as 35 in a minute.' He further suggested that, 'his power may be converted to salutary ends.' Despite the fact that 'evacuation of the water' by means of increased urine production was considered by Withering to be the primary mechanism of action of digitalis, his and later observations of the cardiovascular actions of the drug have clearly contributed to both the treatment and understanding of dropsy and heart failure.

A turning tide of opinion, development of the medical sciences, and increasing legal restrictions forced the decline of quackery between the mid-19th and early 20th centuries. It is no coincidence that this was a time when the emphasis of medical practice was shifting from empiricism to rationalisation, with an increasing consideration of pathology and the modes of actions of drugs.



**A Derangement of the Liver**  
THE CAUSE OF DISEASE  
IN THE  
**STOMACH,**  
—AND—  
**KIDNEYS**  
**ENTERVITUS**  
**STASTEM.**

Nevertheless, quackery is far from dead, and remains an active source of debate in the medical literature.<sup>8-12</sup> The US Congress has determined quackery to be the most harmful consumer fraud against elderly people, and Americans have been found to spend some \$27 billion annually on questionable health care, exceeding the amount spent on biomedical research.<sup>11</sup> Indeed, it has been estimated that, at any given time, 26.6% of the American public is using one or more questionable health-care treatments.<sup>11</sup>

One area in which quackery is a particularly disturbing (and increasing) problem is alternative cancer therapy. Spending by Americans on unproven or worthless treatments for cancer has increased from \$100 million annually in 1965, to about \$4 billion last year,<sup>10</sup> such treatments including behavioural and psychological approaches, special diets, coffee enemas, herbs, and 'pharmacological' treatments such as hydrazine sulphate, Laetrile, and vitamin C. While proponents may claim that these treatments are unconventional, and as such shunned and underutilised by doctors, Durant has pointed out that, in fact, none are unknown to the medical profession, and all have been studied.<sup>12</sup> It is a moot point that if any of the alternative 'treatments' had shown promise, the pharmaceutical industry, which is so eager to exploit new therapies, would surely have done so. So seriously is the threat of quackery taken in the United States, that the American College of Physicians has issued a *Position Paper on Health Quackery* (February 17, 1989), emphasizing the physician's responsibility to become informed about health quackery, and to disseminate this information to patients and colleagues. To this end, the US National Cancer Institute has instituted a freephone telephone number through which information regarding unproven cancer treatments can be obtained.

Interesting observations regarding the consequences of health quackery in developing countries, where it is endemic, have been made by Einterz,<sup>9</sup> and serve to emphasize the importance of keeping a tight reign on quackery in the West. These consequences include: the squandering of meagre incomes; delay in instituting proper treatment; and the debilitating side-effects of powerful drugs and injudicious interventions.

#### Concluding remarks

In conclusion, the prevalence of quackery in the developing world, and its continued costly persistence in the West, indicate that it still poses a major threat to rational medical science and therapeutics, not to mention the dire consequences for patients already alluded to. This threat has been eloquently summarised in a poem by Crabbe (American Medical Association, 1912):

'No class escapes them- from the poor man's pay  
The nostrum takes no trifling part away:  
Time, too, with cash is wasted; 'tis the fate of  
real helpers, to be called too late;

This find the sick, when (time and patience gone)  
Death with a tenfold terror hurries on.'  
A quotation from H L Mencken is even more to the point, 'for every  
complex problem there is a simple solution... and it is wrong'. Left to its own  
devices, one wonders where quackery would stop!

In summary, therefore, I would propose that the threat posed by quackery  
should not only be actively guarded against, but should become a subject of  
much more intensive research in the UK. Despite the fact that quackery first  
appeared in this country, it is depressing to note that most of the research  
discussed in this article has emanated from the United States.

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