Fourthly, valuable though these trials have been, it is hard to believe that there needed to be so many. Our trial resources are limited, and this sort of unco-ordinated proliferation has been extremely wasteful. Furthermore, the benefits of beta-blockade after myocardial infarction are not bought cheaply. In the timolol trial, for example, one extra year of life required on average about 30 patient years of treatment with its attendant side effects and drug costs. (This figure, though it may sound alarming, in fact compares favourably with the treatment of hypertension.) On strict statistical principles the trials can be used only to show the average benefit in all treated patients, and a purist is logically correct to conclude that he should now treat all eligible patients. Many clinicians, however, will prefer a selective policy, arguing that low-risk survivors are not going to benefit enough to merit long-term medication.

Fifthly, the trials have not indicated how long the treatment should continue. Beyond 1-2 years the survival curves do not diverge significantly. The only way to tell whether maintenance of advantage depends on maintenance of treatment would have been to stop treatment in a random 50% of patients, and regrettably this was not done. Those doctors who choose to continue treatment beyond 1-2 years are acting on intelligent guesswork not on evidence. The testing of this question is urgently needed.

It could be dangerous to extrapolate the results of the trials

to groups of patients other than those studied. Unpublished results from the UK oxprenolol trial suggest that treatment started more than one year after myocardial infarction may have an adverse effect on survival. Also the effect on survival in cases of unstable angina and chronic angina is not known, and it might be either good or bad. Beta-blockers should be given for angina only when they are needed for symptomatic relief and their effects in unconfirmed myocardial infarction remain unknown. Furthermore, the effectiveness of beta-blockers in secondary prevention may not apply to prevention of the first clinical attack. Thus, the recent trials do not show that beta-blockers should be the preferred treatment for hypertension: that judgment must await the outcome of current trials in hypertension.

Finally, the experience of trials in which treatment was started early in the attack of suspected infarction are not consistent. If there is an effect on the size of the infarct, how this will influence long-term disability and prognosis still remains to be discovered.

In the past it has often been difficult to identify an association between the results of clinical trials and changes in clinical practice. It is much to be hoped that this time we shall see an exception. It is now clear that beta-blockade, used correctly, can prevent many deaths after infarction.

(Accepted 8 June 1982)

Aspects of Sir Thomas Browne

Sir Thomas Browne: the man and the physician

A BATTY SHAW

Browne's enduring claim to fame rests on his reputation as one of the great writers of English prose, as a moralist, and as a student of the thought and philosophy of his time. Few appraisals have, however, been attempted of his life and work as a physician.

Life and family (fig 1)

Thomas Browne was born in London in 1605. His mother was a relative of the Countess of Devonshire of the day and his father was a City mercer of Cheshire stock who died when Thomas was 8. Browne was educated at Winchester and Broadgates Hall, Oxford, renamed Pembroke College during his second year there. He then spent about three years completing his medical education by study at Montpellier, Rome, Padua, and Vienna, with a final period at Leyden, where he obtained its university's MD in 1633. On returning to England there is debate as to whether he spent the next two years in medical practice at Shipden Vale in Yorkshire or in Oxfordshire, but I believe the former view to be correct. During these two years he wrote the first and most famous of his literary works, *Religio Medici*, though it was not published until 1642 (fig 2),

and then in an anonymous and pirated edition; the first authorised edition bearing his name appeared in the following year.

In 1636 Browne settled in Norwich, where he was to remain for the rest of his life, and in the following year he obtained the MD of Oxford University. Norwich at that time would have had its attraction for a young man intending to establish a practice as a physician, for it was still the largest city of the realm after London, as it had been since the Norman Conquest, but his main encouragement to settle there came from his former Oxford tutor, the Reverend Thomas Lushington, who had moved to Norwich in the previous year as chaplain to its Bishop. His European reputation in the worlds of learning, literature, and natural history has tended to overshadow his parallel career as a physician, but many contemporary accounts bear witness to the high professional reputation he achieved during his 46 years of practice in Norwich. He was but one of a number of physicians practising in the city, thus showing the emergence of trained physicians in provincial cities such as Norwich during the seventeenth century and that he was not without his local professional competitors. Browne, however, was the leading physician among them, with a reputation and practice throughout East Anglia, and it is a fortunate consequence of the assiduous attention paid to the collection and editing of his writings for literary ends that much evidence is thereby provided of his life and work as a physician.

As a sign of the respect Browne earned in the eyes of his

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FIG 1—Sir Thomas and Dame Dorothy Browne. From an oil painting attributed to Joan Carlile (1606?-79). (Reproduced by permission of the National Portrait Gallery, London.)

monarch and the citizens of Norwich he was knighted by King Charles II on a visit to the city in 1671. Eleven years later Browne died on his 77th birthday and was buried in his parish church of St Peter Mancroft, where the inscription on his memorial, composed by his son Edward, describes him as *vir pientissimus, integerrimus, doctissimus*, and *per orbem notissimus*—"a man very pious, whole, and learned and famed throughout the world."¹⁻⁴

Browne's life demonstrates his belief in the importance of keeping abreast of new knowledge after qualification. His pages abound with references to a reading of the recently published works of Willis, Sydenham, Glisson, and other leading medical figures of his time both in this country and in Europe. Especially did he appreciate the work of William Harvey; of his discovery of the circulation of the blood recorded in *De Motu Cordis* Browne wrote that "I prefer [it] to that of Columbus" (4:255-6)⁵ and of his *De Generatione Animalium* Browne wrote, "That excellent discourse—so strongly erected upon the two great pillars of truth, experience and solid reason" (2:265).⁵ Browne told his son Edward that "I keepe the sheets of the transactions [of the Royal Society] as they come out monethly" (4:39)⁵ and exhorted his son, "Bee never without some institution or the like of physick whereof you may daylie or often read, and so continue in mind the method and doctrine of physick, which intention upon varietie or objects of other subjects may make you forget" (4:31-2).⁵

Clinical practice

From Browne's writings much material survives to illustrate the clinical flavour of his practice. Like other physicians of his time he was both a consultant to his colleagues and the family physician to the Norwich merchants and Norfolk county families of his day. It is often said that only the wealthy could avail themselves of the physicians' services in the seventeenth century, but this was not true of Browne, whose records show that he treated many of the poor for charity. In an age of religious and political intolerance he cared for people whatever their beliefs or political allegiance; tolerance of the views of others was one of the great messages of his *Religio Medici*. He was often absent from home for several days and nights at a time visiting his county patients by coach or on horseback and, as one who is called on similar missions to the same Norfolk houses and villages but travelling by motorcar, I am very conscious, especially in severe Norfolk winters, of the demands such journeys must have made on him.

Sir Thomas Browne was much involved with two major infectious diseases of the seventeenth century, plague and smallpox. During his time there were four outbreaks of plague in

Norwich, the major outbreak taking place in 1665-6, when over 2000 people died from it.⁶ The centre of Norwich was deserted, Browne sent his wife and family to an outlying village for safety, but he himself remained near at hand so that, as he wrote, he could "bee serviceable upon occasion to my friends in other diseases" (4:28).⁵

Of cases of malaria Browne wrote more often, as the disease was common in the East Anglia of his time (4:138-9).⁵ After the introduction of cortex peruvianus, or cinchona bark, to England in about 1655 Browne used this new remedy but found that "it doth not so much good as I could wish or others expect" (4:389)⁵; this was no doubt due to its use for fevers other than malaria.

Browne was often confronted with another common East Anglian disease of the time, bladder stone, for Norfolk in the seventeenth to nineteenth centuries enjoyed the unenviable reputation of a higher incidence of stone than any other English county.⁷ Among his patients with stone were two Bishops of Norwich, a Dean of Norwich Cathedral, a Member of Parliament, and many other local dignitaries of the day. His prescription for stone contained marshmallow and other bland remedies (3:463) and he eschewed what he termed the "harsh" medicines

FIG 2—Engraved title page of the first unauthorised edition of *Religio Medici*, 1642.

of the time such as Goddard's drops.⁷ He evinced a great interest in the development of lithotomy for the relief of bladder stone, and when Edward Browne was on a postgraduate visit to Paris in 1665 told him to make "a draught" of the instruments used and to gain experience in what he called "that great operation" (4:27).⁵ On another occasion Thomas Hollier, the eminent seventeenth-century lithotomist to both St Thomas's and St Bartholomew's Hospitals, paid a visit to Norwich and Browne expressed admiration for his "reputation and worth" after the visit (4:161).⁵

Other accounts by Browne dealt with gout, asthma, and rickets and, like many physicians of his time and later, Browne practised obstetrics and gynaecology. "A very good gentlewoman" was provided with a waxed cork to control her uterine prolapse (4:123)⁵ and he carefully read Thomas Bartholin's (1616-80) *De Pregnantium Medicina* for, as he wrote, "you cannot chuse butt meet with many questions from woemen with child" (4:164).⁵ In his observation that "nothing is more common with Infants than to dye on the day of their Nativity" (1:105)⁵ Browne was recording the high perinatal mortality of his time, when the average life expectancy was not more than 35 years. At the other end of life he was familiar with a problem that still concerns us today. "Some thinck that great Age superannuates persons from the use of physicall meanes: and that at a hundred years of age 'tis either a folly or a shame to use meanes to live longer" and yet, he comments, "I have knowne many send to mee for their severall troubles at a hundred yeares of age" (4:144).⁵

Psychological disorders

A notable feature of Browne's case reports, and one to which Sir Geoffrey Keynes has drawn attention,⁸ was his understanding of the psychological disturbance of his patients and his recognition of the influence of the emotions on bodily disease. These were not common features of seventeenth-century medicine, though recognised by a few of its leading exponents such as William Harvey (1578-1657) and Thomas Sydenham (1624-89). They are illustrated by Browne's letters of introduction for two patients that he referred to his son Edward or "cosen" Hobbes in London. Of a Norwich alderman Browne wrote that he was "a meticulous doubting man of a good nature, and unwilling to offend God or man, and seldome without thoughts to perplex himself and making his life the more uncomfortable. . . . Encourage him in those disturbed thoughts. I am fayne to compose him sometimes by good counsell and rationally argument" (4:108-9).⁵ Of another alderman Browne wrote warning his son, "You must have good patience, for hee abounds in questions and doubts, and is soone discouraged and apt to laye hold of any words and to argue agaynst himself or any remedies" (4:221).⁵

An authoritative study of Browne's psychological awareness and intuitiveness has been made by Schneck, an American psychiatrist. Illustrated by many passages from Browne's writings, Schneck has shown that Browne made a number of perceptive psychological and psychiatric observations that can only now be appreciated in the light of recent trends in medico-psychological study. As examples he instances Browne's recognition of the unconscious aspect of the superego, his correlation between dream content and symbolism with states of health and illness, his awareness of the psychopathology of the senile, and his appreciation of an attitude predominant in contemporary psychiatry regarding the importance of presuming one's own individuality and fostering its most constructive expression.⁹⁻¹¹ It would seem that Sir Thomas Browne has earned a more significant place than is normally accorded him in the history of psychiatry and psychiatric thought.

Personal qualities and humanism

In reading Browne's passages that have relevance to his career as a physician kindness, moderation, and tolerance shine from his every page and his life shows how faithfully he carried out his own exacting precept that a man should "tread softly and circumspectly in this funambulatory Track and narrow Path of Goodness" (1:243).⁵ With these qualities went a strong Christian faith, a profound interest in human beings, and the faculty of making patients feel better just for having seen him.

Judged by the standards and state of knowledge of his time,

Sir Thomas Browne was a good physician, and this judgment is supported by the action of his contemporary physicians when in 1664 they elected him to an honorary fellowship of the Royal College of Physicians of London as a man *virtute et literis ornatissimus*—"eminently embellished with virtue and literature." But I am aware, as Browne wrote in another context, that "a good cause needs not to be patron'd by a passion." (1:14).⁵ Browne had his failings. In spite of his great learning and his acute powers of observation it is remarkable that at a time of such revolution in science and knowledge he made no other observation in clinical medicine than to describe adipocere. He has been called "a hunter of oddities and strangenesses" and I suspect that this sometimes clouded his appraisal of a clinical situation. Though a critic of vulgar errors, he could not see through some of the common errors of his age such as the efficacy of the King touching for scrofula or the value of Powder of Sympathy.⁸ He has more widely been criticised for his belief in witchcraft. This belief was undoubted. As a young man he had written, "For my (owne) part, I have ever beleevd, and doe now know, that there are Witches" (1:40).⁵ He reiterated this belief in his 60th year at a celebrated trial of two supposed witches held at Bury St Edmunds.¹² In defence of Browne it has to be remembered how hard it was not to believe in witches during the seventeenth century, when belief in the Old Testament was so implicit. Browne's views were shared by Francis Bacon, among many other of his contemporaries, and John Wesley held them a century later.¹³

In 1905, to commemorate the tercentenary of Browne's birth, a statue of him was unveiled in Norwich opposite the site where his house had stood; among those present were many members of the medical establishment of the day,¹⁴ including Browne's famous disciple and fellow physician and humanist, William Osler (1849-1919), who had taken up the regius chair of medicine at Oxford earlier in the same year. One week previously Osler had given a lecture on Browne to the medical students of Guy's Hospital that he ended with the following words: "Mastery of self, conscientious devotion to duty, deep interest in human beings—these best of all lessons you must learn now or never: and these are some of the lessons which may be gleaned from the life and writings of Sir Thomas Browne."¹⁵

This article is part of the Vicary Lecture delivered at the Royal College of Surgeons of England on 26 October 1977 and is reproduced by kind permission of the author and the Editor of the *Annals of the Royal College of Surgeons*.

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