exhibit signs of a desire for relaxation from constraint; with an effort he breaks gently to some subordinate that he is himself again, and is all right before the doctor's next visit.

The means recommended to make a man desist from his imposture are many, and need not be recounted here. Whether moral or physical, they have, in a measure, to be adapted to the particular cases under treatment. Where imposture is evident, a small galvanic battery has wonderful influence, and is safe. Its indiscriminate application would be cruel. It should be used not to detect, but to put a stop to the pretended madness.

Voluntary Patients in Asylums. By Stanley Haynes, M.D. Edin. Medical Superintendent of Laverstock House Asylum, near Salisbury.

(Read at the Quarterly Meeting of the Medico-Psychological Association, held at the Royal Medico-Chirurgical Society, October 28, 1869.)

It has appeared to me highly desirable, if not requisite, that there should be some extension of the present system for the admission of boarders into establishments for the insane, and that the anomalous and confusing condition of the existing laws referring to them, by which each division of our country has its enactments at variance with the others, should be amended in such a manner that all parts of Great Britain and Ireland should be subject to one scheme of legislation on the subject.

I propose to indicate the existing requirements of the lunacy acts respecting boarders, to show the advances already made and the imperfections now experienced, to offer some proofs of an extension of the law being necessary, and to make some suggestions for further legislation concerning the semi-sane we meet with in psychological practice. I believe there is great, if not urgent, room for improvement, though it cannot be denied there are many obstacles to impede a satisfactory settlement of a difficult and delicate topic. Many persons who are not of unsound mind, but who find their mental health is endangered or weakened, might, by an expansion of the present lunacy laws, be received into asylums as voluntary patients or boarders, with strong probability of

https://doi.org/10.1192/S0368315X00233483 Published online by Cambridge University Press

speedy recovery, protection from danger to themselves and others, absence of predisposing and exciting causes and the means of satisfying morbid cravings, with diminution of family disturbances and enmities, and with a due regard to that popular bugbear, the "liberty of the subject."

It is so abundantly proved, by the reports of the Commissioners in Lunacy and the experience of all connected with the care of the insane, that the proportion of recoveries is in direct ratio to early treatment, that it seems unnecessary to discuss this topic.

Scarcely a week passes without the intelligence in the newspapers of some suicide or homicide, arson or other crime, committed under the impulse of what is termed "temporary insanity," and in too many cases it is evident, not only to medical men but to general readers, that the perpetrator should have been treated as of unsound mind and the crime thereby prevented. I may here remark upon the enormous amount of crime directly caused by the unthinking and extremely injudicious manner in which accounts of terrible crimes are detailed and sensationalized in many of the newspapers: we know how some persons will dwell upon the most horrible particulars of any tragedy they may become aware of until they form the idea they might be actors in similar scenes, and how the thought once entertained is frequently succeeded by a repetition of the deed which originated it. Psychologists will not be surprised if the recent massacres at Pantin and at Wood Green are imitated in other places. If records in the newspapers, circulating amongst our poor and criminal classes, were confined to the fact of any particular crime having been committed, no details being given of the mode in which they had been perpetrated, much crime would be prevented; unfortunately, the insertion of the details insures a large sale.

Those who study insanity and have intimate relations with its victims know how fearfully strong are the impulses under which deplorable and — very often — preventable acts are committed, and many have borne record in their writings of the frequency of such morbid motives. Some of those who suffer from dangerous ideas have a most lively horror of them and wish to be prevented from obeying them, but the present state of our English law does not permit the reception of such persons into asylums unless certificates of lunacy and other documents have been previously signed, or unless they have been certified patients in some asylum

https://doi.org/10.1192/S0368315X00233483 Published online by Cambridge University Press

within five years; it is only in asylums that I believe such individuals can be treated safely. (As I shall presently explain, the Scotch law differs from the English). I entertain the strong conviction that if our laws were modified to permit the admission, under due restrictions, of such persons as voluntary patients when certificates cannot be obtained, and that if the amended law were made known, many of them would enter asylums and place themselves under discipline and treatment, on account of the feeling of intense relief they would experience on having avoided the temptations to which they were subject, and the knowledge that while under supervision they would be free from danger to themselves and others. It frequently happens that when it is considered advisable to place a member of a family or other friend in an asylum there is a prejudice on the part of the patient that family ties or friendly feelings have been loosened, if not ruptured, and much bitterness of spirit and heartburning, not to speak of enmities, have been caused, to last, perhaps, as long as the patient lives. In numerous other cases those interested in the mental invalids have felt the strongest antipathy against taking any steps for their security, on account of the natural dislike to subject them to any curtailment of their personal liberties, the cognisance of the evil feelings sometimes aroused, the moral and legal responsibility of the procedure and, in too many cases, the prejudice still existing against asylums, but which is now, happily, subsiding, because it is known asylum care and treatment are characterised by humanity and an advanced stage of medical knowledge, and that a close supervision is, very properly, maintained over all asylums for the insane by the authorities appointed by the government. If the voluntary system of admission into asylums were extended many of the difficulties I have mentioned would be lessened or abolished.

I have termed the liberty of the subject a "popular bugbear" because it is so well protected by existing legislation, if fully carried out—as it is by the Commissioners in Lunacy —that little or no abuse of it can occur without the knowledge of the authorities; unless, indeed, it is in religious houses, in hydropathic establishments or in the case of patients kept without payment or at home. The recent prosecutions by the Board of Lunacy have proved very beneficial with regard to single patients for whom payments are made. It seems fairly open to serious consideration whether commissioners should not be appointed to inspect all the inmates

https://doi.org/10.1192/S0368315X00233483 Published online by Cambridge University Press

of monasteries and convents, and all houses into which dipsomaniacs are received, and whether the Commissioners in Lunacy should not be supplied, under heavy penalties, with the names, addresses, and other particulars of all insane persons in residences out of their present jurisdiction. While freely admitting the general excellence of religious communities, and the great advantages of hydropathic establishments, I think it is questionable whether some of their inmates are not—more or less—of deficient mental power, sufficient to bring them and their properties within the care and protection of the State, and whether they should not be thrown open to the authorities in the same manner as lunatic asylums are, instead of being, practically, uncontrolled. But this is a digression, for which I hope to be excused on account of the importance I attach to its subject.

Let us now examine the various systems of legislation pertaining to voluntary patients. And, first, let us take that of England.

Until 1853 no person could be received into a licensed house as a boarder, and such houses were consequently closed to all but patients.* In the Lunacy Act of that year,† provision was made that any patient discharged from a licensed house might be retained in it as a boarder if the previous assent in writing of two of the Commissioners had been obtained; and also that a relative or friend of any patient might, by means of a similar assent, be received therein as a boarder. This was for the benefit of patients who had been, or were, certified, and the period of residence as boarder or companion was specified in the assent, which the Commissioners could extend or revoke. It will be noticed that the object of a patient's relative or friend residing in an asylum was for the sake of companionship and consolation, and was not intended as any advantage to the mental health of the companion. Up to that time boarders of any kind were unknown in any institution for the insane, and it will be observed that a person, under the Act of 1853, could not be admitted into a licensed house as a voluntary patient for his own mental infirmity, but that its enactments were limited to him who was either resident at the time in the house, or who had a friend willing to be his companion there.

* Definition of "Patient," see Appendix.

† 16 & 17 Vict. c. 96, s. vi. Fry's Lunacy Acts (1864), p. 322.

https://doi.org/10.1192/S0368315X00233483 Published online by Cambridge University Press

By the Lunacy Acts Amendment Act of 1862,* superintendents of licensed houses are permitted to receive as boarders those who have been patients in any asylum within five years immediately preceding, if the assent, which is granted for a specified time, of two or more Commissioners or Visitors have been previously obtained. This was a great improvement on the previous Act; but it continues to shut out from licensed houses and public asylums all those who, though feeling the advisability of asylum treatment, have never been certified. Registered hospitals† for the insane have a great advantage over licensed houses and asylums in this respect, that those who wish to reside in them may do so.‡

The enactments regarding boarders apply only to licensed houses and to registered hospitals, so that the poorest, who perhaps have more need to become voluntary patients than those higher in the social scale, are debarred from entering English asylums—*i. e.*, public pauper asylums—unless they are received as certified patients.

Writing of hospitals for the insane the Commissioners have thus expressed themselves §—

"It would appear advisable to render admission into them less difficult, if not in every case, yet at least in those where the patients suffer from sudden and uncontrollable impulses to commit violence or suicide, and who desire to place themselves under care and treatment. But besides persons of unsound mind, for whose medical care and treatment hospitals are primarily intended, it has occurred to us that it would be very desirable if arrangements were made for the reception therein of persons, of whom we have reason to know there are many, not insane, who, being conscious of a want of power of self-control, or of the addiction to intemperate habits, or fearing an attack or a recurrence of mental malady, and being in all respects free agents, are desirous of residing as voluntary boarders in an institution for the insane."

If it be desirable, as it most assuredly is, to facilitate the admission of the persons described by the Commissioners in the above extract into hospitals, surely it is no less to be

* 25 and 26 Vict., c. 111, s. xviii. See Appendix, 2.

† Definitions of "Licensed House," "Asylum," "Registered Hospital," in 8 and 9 Vict., c. 100, s. cxiv. See Appendix, 3.

‡ See Case and Opinion in Appendix, F (p. 107), 17th Report of Commissioners in Lunacy, 1863.

§ 17th Report of Commissioners in Lunacy, 1863, p. 12.

https://doi.org/10.1192/S0368315X00233483 Published online by Cambridge University Press

wished that similar privileges may be extended to licensed houses, and to county, borough, and other public asylums—to affluent, middle-class, and pauper boarders, as well as to hospital ones. It may be urged that the admission of paupers as boarders into asylums would increase public asylum expenditure but, irrespective of the fact that the plan is actually adopted in Scotland, I am satisfied it would be cheaper to their counties or boroughs to admit them when they wish than to wait until they require certification, or have committed some illegal act. A suggestion made by the Scottish Commissioners, in their Report for 1861 (p. xxxvii), with regard to paupers liberated on trial, may be introduced here, as bearing on this point. It is that "It would be advisable, in the cases of paupers, to retain the patient's name on the poor-roll during the period of his probation, and also to grant him a liberal alimentary allowance, with the view of securing his continued proper care and treatment and consolidating his convalescence. We are satisfied that statutory authority, to enter into arrangements of this kind, would be followed by important benefits to the patients. The knowledge that the means of subsistence were secure for a certain period would enable them gradually to resume the duties of life, and would tend to protect them against a relapse which, under existing circumstances, not unfrequently takes place, and often leads to suicide." I bring forward this generous and enlightened suggestion because it appears only reasonable to suppose that when such amenities are proposed by Commissioners in Lunacy for the benefit of certified patients, they would not have any objection to very poor persons, who wish to become voluntary patients, being placed on poor-rolls, and their names being kept on them for a time after discharge. It should be considered also that boarders in public asylums would partly, if not in some cases entirely, repay their expense by their labour.

Having considered the English, I propose now to indicate the Scotch legislation concerning boarders. It will save time if I mention the enactments now in force, without describing the previous ones.*

By the Lunacy (*Scotland*) Act, 1866,† persons who are desirous of submitting themselves to treatment, but whose mental condition is not such as to render it legal to grant certifi-

* 25 and 26 Vict., c. 54, s. vi., Lunacy (*Scotland*) Act, 1862.
† 29 and 30 Vict., c. 51.

https://doi.org/10.1192/S0368315X00233483 Published online by Cambridge University Press

cates of insanity, are admitted as boarders into Scotch asylums —public as well as private—if they have previously written to the Commissioners and have obtained the written assent of one of them, subject to provisions that such boarders must be seen by the Commissioners at each visit; that unless the boarder becomes a patient he cannot be detained more than three days after giving notice of his intention or desire to leave; and that notices of admission, discharge, or death shall be sent to the Commissioners as in the case of patients. Also, that in the event of such boarders becoming patients, the certificants must not be in any way connected with the asylum. Nothing is specified concerning the duration of time granted by the assent, the renewal, or the revocation of it.

Under the existing state of the law there is a reluctance to receive boarders into Scotch asylums, in consequence of the want of control, and therefore of benefit in many cases. Of dipsomaniacs as voluntary patients the Commissioners have reported * "The chief impediment . . . . . is the want of the power of compulsory detention. It is undeniable that much mischief is caused to the health of the individual affected, and to the property and comfort of his family, from the irresistible tendency to the abuse of stimulants, and the question of legalizing compulsory control, where such a tendency exists, is one in favour of which powerful arguments may be advanced. At the same time it is not desirable to bring mere drunkards within the scope of the lunacy laws; and there will frequently be a difficulty in determining where vicious indulgence ends and disease begins."

In Ireland there are not any enactments respecting boarders in asylums, and their reception therein is consequently not recognised by law. In two or three instances within a period of, perhaps, ten years persons have been found residing voluntarily in licensed houses by the Inspectors of Lunacy—who correspond to our Commissioners—but no objection has been made, the Inspectors being satisfied that no restrictions were placed on the freedom of egress of such residents whenever they wished. In at least one of the public asylums relapsed patients sometimes seek re-admission voluntarily, and they are received and treated like the other inmates.

Previous to 1838 † voluntary patients could be admitted into asylums in France, provided they were received into a

* 10th Lunacy Report, 1868, p. lxv.
† Loi de 30 Juin, 1838.

https://doi.org/10.1192/S0368315X00233483 Published online by Cambridge University Press

special department, in which they would be kept free from contact with any of the insane; but in that year the permission was revoked, because it was found so inconvenient: under it the boarders could go out or leave at any time, however seriously affected, and any benefits derivable from asylum residence were therefore illusory.

As some proof of the necessity for legislation in England for those who wish to become boarders I may mention that the number in Scotland of those admitted, who voluntarily sought admission, was in 1864 twelve, of whom eight were received as boarders, and four as patients; in 1865 eight, of whom three were admitted as voluntary residents; in 1866 fifteen voluntary patients were received; in 1867 seventeen, fourteen of whom were received into public, and three into private asylums; and that last year the number rose to thirty-one—making a total of eighty-three in five years. My esteemed teacher and friend, Dr. Skae, has recorded in his reports of the Royal Edinburgh Asylum, at Morningside—from which I wish I had time now to give many valuable extracts*—that in 1858 he received three applications from persons entreating to be admitted; in 1859, four; in 1860, one; in 1861 and 1862, several; in the year 1863 a considerable number, of whom three were admitted as voluntary residents; in 1864 eight applications were made, and in 1865 several; and that in 1866 ten were taken to the asylum at their own request, or went seeking admission, and of these five had previously been inmates. He received other applications in 1867 and 1868. This is the experience of only one superintendent, and demonstrates how large a number seek admission in Scotland. It should, however, be considered that some went from other countries. Were the Scotch system extended to the other portions of our empire there is little doubt the number of voluntary applications for admission would be considerable; and I believe that if the scheme I suggest were adopted it would be very large. I base this assumption on the proportion of the populations to the countries: Scotland has a comparatively small population, but we have found her asylums received eighty-three voluntary patients in five years, and that the number is progressively increasing. At present persons desirous of obtaining asylum protection, and who have never been patients, have to

* Royal Edinburgh Asylum Reports for 1858, p. 25; 1859, p. 19–21; 1860, p. 22: 1861, p. 15; 1862, p. 18; 1863, pp. 14 and 17; 1864, p. 18; and for 1865, p. 16.

https://doi.org/10.1192/S0368315X00233483 Published online by Cambridge University Press

go to Scotland for it. During the past two years I have received applications respecting voluntary boarders; three persons were admitted, having been former patients, the others could not, because they had never been certified. I expect to hear many English superintendents receive similar and numerous applications, and also have to decline them.

I believe the old adage that "prevention is better than cure" is as true of mental as of physical morbid conditions; that many a case of absolute certifiable insanity could be warded off by the early treatment of unhealthy symptoms, and that when opportunities occur for checking them we should, and ought to, have the means of placing the sufferer under the most favourable conditions for recovery. I do not pretend to affirm that all persons with over-wrought mental energies require rest in an asylum—far from it; but I do think that when such persons wish to enter asylums they should be free to do so. There is something very calmative and beneficial to the disturbed mind in a well-managed asylum; the regularity and routine, discipline and order, presence of skilled attendants, the means for amusements and exercise, the absence of exciting causes, are in themselves sufficient for the recovery of many of the inmates; while voluntary patients know they are free agents, and have confidence that all will be done that can be to restore them to health.

With regard to dipsomaniacs Dr. Symonds, the President of the Social Science Congress at Bristol, has this month read a paper on "Proposed Legislative Prevention of Drunkenness," and for argument assumes that a drunken man is in an unsound state of mind, and should be guarded from evil to himself and others as much as a lunatic. He proposed a resolution, which was carried with but one dissentient, viz.: "That dipsomaniacs should be liable to deprivation of liberty, with a view to their protection and reformation." Were any enactments made legalising such deprivation, there can be little doubt many persons would voluntarily enter asylums in preference to being sent to them, and as it seems probable we must soon provide retreats for oinomaniacs, it becomes a question of some moment whether we should not enable their managers to detain those confided to their charge.

Professor Gairdner believes that in intractable cases of drunkenness "the person of the drunkard might be placed under restraint in properly-regulated establishments, like the 'inebriate asylums' of America, under State inspection and

https://doi.org/10.1192/S0368315X00233483 Published online by Cambridge University Press

control." Many arguments could be advanced in favour of this suggestion, and I think a strong one is that if all dipsomaniacs—*i. e.*, all those who labour under uncontrollable impulse to alcoholic excess—were deprived of liberty, there would be a considerable diminution of hereditary tendency towards mental and physical imperfections : moral and intellectual idiocy and insanity, epilepsy and allied disorders, criminality and intoxication on the one side, scrofula and tuberculosis, rachitis and chorea, neuralgic and other nervous affections on the other. The appointment of a commissioner to visit and report upon the American "inebriate asylums" would be productive of much valuable information to our Government, and would probably be succeeded by important results.

I have endeavoured to prove the extent and the deficiency of legislation respecting boarders or voluntary patients in asylums and other establishments for the insane, and to point out the necessity for its enlargement, and wish now to indicate the mode in which I would suggest its amendment.

Let there be one system of lunacy law for all the divisions of the British dominions. "There are no less than forty-one acts affecting the insane subjects of Her Majesty in England and Wales."*

Confining my remarks to legislation on boarders, I would urge that—

1. It may be lawful for the proprietor or superintendent of any establishment—whether asylum, hospital, or licensed house—for the reception of lunatics† to receive and keep in such establishment as a voluntary boarder any person who shall express a desire, in writing, addressed to the proprietor or superintendent, to become a boarder,‡ without any certificate or assent being previously obtained.

2. Every such boarder shall be produced to the Commissioners in Lunacy, or Visitors, at each statutory visit.

3. The superintendent or proprietor shall, within twelve hours of verbal or written notice from any boarder, furnish such boarder with a form of notice of intention to leave,§ and shall permit him or her to leave on the day named in such notice.

* 22nd Report of the Commissioners in Lunacy (England), 1868, p. 90.
† As defined by 8 and 9 Vict., c. 100, s. cxiv. See Appendix, 1.
‡ Appendix. Schedule A. § Appendix. Schedule B.

https://doi.org/10.1192/S0368315X00233483 Published online by Cambridge University Press

4. The superintendent or proprietor shall send notice* to the Commissioners or Inspectors of Lunacy, to the District Board of Lunacy in the case of asylums and hospitals, and to the Clerk to the Visitors and to the Medical Visitor in the case of licensed houses, within twenty-four hours of the reception of any boarder.

5. The superintendent or proprietor † shall enter the reception of all boarders in a reception book to be kept for such purpose, and send notice of leaving, with state and address of the boarder, or of death, to the authorities mentioned in the last paragraph, the same as for certified patients.

6. The superintendent shall send a statement of the condition of every boarder to the Commissioners or Inspectors of Lunacy at the expiration of every three months from the reception of such boarder.

7. The Medical Visitor shall see every boarder in a hospital or licensed house, free from the superintendent, medical assistant, or proprietor, within three days of reception; the fee for such visitation to be paid by the boarder.

8. A boarder entering a private asylum may make arrangement as to payment with the proprietor or superintendent, who shall be able to enforce such payment to him by law. A boarder entering any other establishment for the insane may agree to pay such sum, in whole or in part, as may be agreed upon between him and the managers thereof; when he or she can only pay in part the balance shall be charged upon the common fund of such establishments. In the case of pauper patients the payment shall be made by the parish to which he or she belongs, and shall be of the same amount as for patients. (This may be objected to by some ratepayers, but I believe it will be found wiser to charge parishes with the maintenance of boarders than to run the risk of such persons becoming patients, and therefore, by reason of commission of crime, medical certificates and other expenses, proving more expensive.)

It would be better, whenever a boarder may be certified and so become an ordinary patient, that he should be transferred to another asylum—that he should not be admitted at all as a patient into any asylum into which he had gone as a boarder—unless he expressed a strong wish to remain.

* Appendix. Schedule C.

† The last pages of the existing "Admission Book" would suffice for this purpose; or the receptions might be entered with the admissions in red ink and without numbers, to distinguish them.

https://doi.org/10.1192/S0368315X00233483 Published online by Cambridge University Press

It may be thought I take an extreme view of the importance of persons being able, of their own will, to enter asylums for treatment of incipient or slight or latent attacks of mental disorder, but when we reflect that 2,000 suicides occur annually in Great Britain, and that very many of them are preventable, it is but just to suppose that, were asylums thrown open in the manner I have indicated, and with the precautions against abuse I have suggested, some of the persons with suicidal tendencies would become boarders and so have their lives saved and, instead of being losses to society and to the State, be gains to them by recovering from their abnormal conditions and resuming their previous positions in the world. If we assume only a few suicides would thereby be annually prevented it would be matter for sincere congratulation and comfort. Those who have studied insanity in its various forms know these arguments apply as strongly to homicides as to suicides, and that the homicide frequently becomes the suicide, as is but too often proved by newspaper reports. While I have been writing this paper the country has been horrified by the poisoning of a fondly-loved wife and four children, and of the poisoner; such cases excite no surprise in the psychologist, because he knows that those who are most attached to their kindred during mental health are the most likely to destroy them, and often themselves also, if their minds lose their equilibrium.

We read almost every week of some person having committed homicide or suicide, or both, and the evidence before the coroner frequently proves that the culprit had been of altered manner and behaviour before the commission of the act, but had not been deemed sufficiently insane to justify removal to an asylum. It is my firm belief, supported by personal knowledge, that some of those persons would voluntarily enter asylums if they knew they could be received on simply going to them and asking to be admitted, stating their reasons. If asylums were thus assimilated to general hospitals, more real and general knowledge of them would spread amongst the public, existing vulgar prejudices would consequently be destroyed, and great benefit would result to the partially insane as well as to the mass of asylum inmates. At present there is a lamentable amount of ignorance throughout the general public regarding asylums and the treatment pursued in them, and it is therefore much to be wished that it were commonly known how the inmates are treated, and what liberties and advantages they enjoy; then

https://doi.org/10.1192/S0368315X00233483 Published online by Cambridge University Press

those who have left asylums would be humanely treated out of them as in them, and the sensitive convalescent would not be taunted and viewed with suspicion by those about him, and no stigma would attach to him, because it would be known that in many cases physical debility or disease has caused the appearance of mental symptoms instead of the more ordinary signs of corporeal disorder.

In conclusion, I wish to protect myself from those who may think I urge an extended system of boardership in asylums from interested motives; my objects are to alleviate suffering, diminish danger, and protect valuable lives, and my endeavour has been to show how boarders could be received into all classes of institutions for the insane in all parts of Great Britain, if not throughout the British empire; for I know no sufficient reason why the scheme I have sketched out could not be adopted in India, Canada, Australia, and all other of our possessions. That I am not unduly prejudiced in favour of asylum superintendents, but that the subject has been regarded from the public point of view also is, I venture to hope, proved by the precautions I have outlined against any abuse. Many, no doubt, will think that in all cases a medical certificate of the boarder's mental condition should be obtained, but it is not required in Scotland, nor do I deem it necessary or advisable, because the majority of those who seek asylum treatment only manifest their true state by their own perceptions, and are consequently in such a condition that nothing conclusive can be certified of them; besides which, the giving of any certificate would place the certificant in a very painful position with the boarder: further, I do not suppose any person would attempt to become a boarder in an asylum unless he felt he required treatment and rest in one.

APPENDIX.

1. Definition of Patient (8 & 9 Vict., c. 100, s. cxiv.). "Every person received or detained as a lunatic or taken care or charge of as a lunatic." Definition of Lunatic. "Lunatic shall mean every insane person, and every person being an idiot or lunatic or of unsound mind." *Fry's Lunacy Acts*, 1864, p. 305.

2. Op. cit., p. 509. "It shall be lawful for the proprietor or superintendent of any licensed house, with the previous assent in writing of two or

https://doi.org/10.1192/S0368315X00233483 Published online by Cambridge University Press