the organic cases, we will now consider how we should name it. To apply the term neurosis to all these cases indiscriminately would be absurd; still we think we may call functional angina a neurosis, by which we mean that its symptoms are all due simply to a derangement of its nervous supply, all our diagnostic and pathological skill being unable to detect any lesion. These symptoms point, we believe, to the paroxysm as a slight paralysis due to innervation, and generally excited by some sudden exertion bodily or mental; the heart's substance, being otherwise healthy, and having undergone no degeneration of structure, rapidly recovers its irritability. How different is a case of organic angina! The symptoms are also due, we think, to a paralysis; but here the lesion is a serious change in the muscular substance of the heart, brought on by different causes; hence the difference in the history and progress of the case. The paralysis occurs in the one in a comparatively healthy heart, while in the other it is weakened by the inroads of disease. Thus, although the heart recovers itself at first, it is due to the fact that, in the commencement of the disease, the attacks are slight; but as it advances, the attacks become more frequent and more severe, the heart is gradually worn out, and fails to recover itself: hence the result is fatal. So, while we have reason to call the functional attacks a neurosis, we have none to call the organic so. A careful examination of the dissections points to a weakened heart as the immediate cause of the paroxysm in both: in the functional, the heart being simply weakened as to its innervation; in the organic, weakened both in its innervation and structure. The only remaining question is, What is the paroxysm? Is it a paralysis or a spasm? This is, perhaps, the most difficult point of all; but, at present, we cannot enter upon it; although, as we have already mentioned, we are inclined to believe it a paralysis.

ARTICLE VII.—*Mollities Ossium in relation to Rib-Fracture among the Insane.* By W. LAUDER LINDSAY, M.D., F.R.S.E., Physician to the Murray Royal Institution (for the Insane), Perth.

I VENTURE to offer the following cases, and the relative commentaries thereon, as a contribution towards a better knowledge of a subject that has lately attracted a good deal of attention, both public and professional, in England, in consequence of the animadversions of the press on various instances of *rib-fracture* among the inmates of its county lunatic asylums. The subject to which I refer includes, on the one hand, a consideration of that unnatural fragility of bones, which renders them liable to fracture from the most trivial causes; and on the other, the frequency of *rib-fracture*, which cannot possibly be attributed to ill-usage by attendants.

I do not offer my remarks apologetically; for I believe that the

animadversions above referred to are unwarranted either by evidence or legitimate inference—at least, in the majority of cases. Nor am I to be understood as affirming that fragility of the bony system is peculiar to the insane; though I believe it is much more common among them than is usually supposed. Whether it is as common as it is among the sane, or more so, remains to be proved. This is a subject that seems to me deserving of full and immediate inquiry. I have repeatedly stated¹ that I have never met with, nor heard of, any lesion among the insane that is to be considered *quite peculiar to them*, and in this sense to be regarded as diagnostic of the existence of insanity. It is wonderful, however, how persistent and ingenious are the efforts of alienists to make out an essential or specific difference between sanity and insanity, the sane and insane, as regards their pathology and morbid anatomy, in the face of incessant and egregious failures. The “thin partitions” that are supposed to separate them—that “do their bounds divide” between great wit and madness—are not real or perceptible,—not demonstrable or definable; and all efforts artificially to create specific distinctions where Nature has none, *must* end only in failure.

I do not necessarily connect fragility of the bones in the insane with the accidents that have of late years been made the subject of sensational, and, I believe, most ungenerous and unjust, outcry by the fourth estate. There *may* have been, in some cases, an essential connexion between osseous fragility and rib-fracture as cause and effect; but the effort to prove or disprove such a connexion in the cases referred to, is no part of my present object, which is simply—so far as regards,

I. *Mollities ossium* in the insane, to show that it sometimes exists in as marked a degree as among the sane; and as bearing on

II. *Rib-fracture* in the insane, to point out (a.) The frequency of self-injury. (b.) The very slight violence sometimes required for rib-fracture. (c.) The existence of serious or fatal surgical injury without external marks, or any relative symptoms. (d.) The importance of post-mortem examination in the detection of masked or unsuspected injury. (e.) The desirability of distinguishing from each other² injuries that are—1, accidental; 2, self-inflicted; 3, the result of maltreatment by attendants. (f.) The injustice of attributing rib-fractures and similar injuries necessarily to attendants. (g.) The frequency of such injuries is a necessary consequence of the non-use of mechanical restraint. (h.) Those who are responsible for the frequency of such injuries are, therefore, those who have advocated the *non-restraint dogma*. (i.) There are *no* pathological lesions peculiar to insanity.

¹ Vide “Illustrations of Pathology and Morbid Anatomy in the Insane,” Journal of Mental Science, vol. xii. p. 522; and the following Reports of the Murray Royal Institution,—30th, pp. 15, 16; 32d, p. 15; and 38th, p. 15.

² Vide 32d Report of the Murray Institution, p. 11.

I. *Case of Mollities Ossium*.—The patient was an unmarried lady, aged 49, eminently nervous in temperament, of fine build of body, and of high delicacy of constitution, with a strumous tendency. For a long series of years, she had been the subject of chronic insanity. In the last seven years of her life, during which she was under my observation, her general health was fair, till she began to complain of aching pains in the bones, of a character supposed to be rheumatic. There gradually supervened a marked general debility, requiring rest in bed, to which she was confined for the remainder of her life—a very few weeks. While bedridden, boils appeared on different parts of the body; then acute tuberculosis suddenly showed itself, and rapidly proved fatal (in a fortnight). A post-mortem examination was made, which revealed, besides infiltration of the lungs with miliary tubercle, and slight fatty degeneration of the kidneys, as well as other pathological lesions, the following condition of the bones. The walls of all bones were thin and soft, easily pierced by any steel or other hard instrument. The normal medullary (or cancellated) tissue was absent; the interior of the bones being occupied by a thickish fluid, which consisted apparently equally of blood and oil. Their surface was abnormally vascular and coloured—usually a deep reddish-brown. The sternum was so flexible, that it could be doubled on itself without much difficulty. The general condition of the whole bones of the system was that usually described as the earlier stage of *mollities ossium*; it was apparently essentially a hyperæmia, followed or accompanied by *fatty degeneration* of their whole texture and contents.

For some time prior to her decease, the *urine* had been highly *phosphatic*, but non-albuminous. It does not, however, follow that this apparent excessive excretion of phosphates stood directly related to the condition of the bones. For, on the one hand, as Neubauer and Vogel point out, mere *sediments* of earthy phosphates in the urine do not necessarily indicate *excess* of these salts—absolute excess being determinable only by quantitative analysis;¹ and, on the other, as I have elsewhere shown, phosphatic urine is common among the insane,² while there is no reason to regard *mollities ossium* as otherwise than rare (comparatively) among either sane or insane. According to some writers, the excretion of phosphates, as measured by the phosphatic character of the urine, bears a specific relation to certain forms or phases of mental disease (*e.g.*, mania); but I long ago pointed out that this is a fallacy, and my experience has been confirmed (apparently) by the later researches of Dr Addison, now of Larbert. He writes:—"The quantity of phosphoric acid

¹ "Guide to the Analysis of the Urine." Translated for the New Sydenham Society, 1863, p. 331.

² "On the Chemistry and Microscopy of the Urine in the Insane," Journal of Psychological Medicine, July 1856, pp. 492, 496; and 30th Annual Report of the Murray Institution, p. 16.

excreted in states of mental excitement was *less* than after convalescence. . . . This perhaps is the most important fact elicited by the investigation, for a greater than the average excretion of the phosphates has come to be regarded as a pathognomonic phenomenon of maniacal excitement." (P. 15.) . . . "I consider it sufficiently proved that the quantity of phosphoric acid excreted during the course of a maniacal attack, is *less* than that voided in an equal time after recovery." (P. 16.) . . . "I believe that the excretion of phosphoric acid is regulated more by the condition and weight of the *body* than by the action of the *brain*." (P. 27.)¹

In the foregoing case (I.) there was no fracture of any of the affected bones; but it is obvious they were in a condition in which some very trivial cause might have caused fracture. Drutt tells us, in his admirable "Surgeon's Vade-Mecum," that in *mollities ossium* "from a fall or some other *slight injury*" the bones are liable to break; or that "bone after bone breaks from the *slightest cause*" (1851, p. 217). Even in the earlier stages of the degeneration, and still more so in the later ones, slight stumbles in one's own bedroom—falls against the edges of beds, chairs, or tables during the night—or even ordinary, and still more so inordinate or unusual, muscular effort—may suffice to produce rib-fracture.

The morbid condition of the whole bony skeleton in this case was quite unsuspected during life; it was detected, and could only have been detected, by post-mortem examination. Such cases furnish one of many sorts of argument that might be adduced in favour of such examinations in *every* death from insanity.² I have elsewhere pointed out that autopsy frequently reveals the most unexpected pathological lesions of the most interesting kind—though not necessarily interesting as throwing light on, or essentially connected with, the *mental* or cerebral disease. Autopsy in the insane is, however, one of these subjects, on the other hand, regarding which it may prove that "ignorance is bliss," and "'tis folly to be wise;" for it, and it alone, may bring to light injuries or lesions, the origin or cause of which may become subject of judicial inquiry, newspaper outcry, and public condemnation! The frequency with which previously unsuspected rib-fracture is detected by post-mortem examination may be illustrated by the following:—

II. *Cases of Rib-Fracture detected only on Post-mortem Examination*, which occurred in the practice of Dr Workman, of the Provincial Lunatic Asylum for Upper Canada, at Toronto—a gentleman who is distinguished among American alienists for the attention he devotes to morbid anatomy, as well as for the manly frankness with which he expresses his opinions.

A. A male, æt. 52, "of large size," suffering from general paralysis, his insanity characterized by "great restlessness and vio-

¹ "On the Urine of the Insane." Reprint from the Brit. and For. Medico-Chirurgical Review, April 1865.

² *Vide* 39th Report of the Murray Royal Institution, p. 13.

lence." During life he "neither admitted that he suffered any pain, nor gave any indication of so doing." Death arose apparently from "cerebral compression." At the post-mortem examination, attention was therefore directed mainly to the *brain*. "After I left the dead-room, believing I had seen *all* that the case afforded, my assistants proceeded to examine the rest of the body. . . . They were surprised to find pus diffused beneath the muscles on the left side" (of the thorax), "and fractures of five ribs running in a vertical straight line a short distance from the junctions with the cartilaginous portions. No reunion had taken place. . . . There was no reason to doubt that the fractures of the ribs had taken place *before* the patient's arrival at the asylum. The rectilinear course of the fractures appeared to indicate that they had resulted from a *fall* forward on some hard, narrow surface, such as the edge of a board or plank. The account given as to his violence and restlessness corroborated the supposition. This patient not only appeared perfectly free from pain or muscular impairment up to the period when symptoms of cerebral or cerebro-spinal compression showed themselves, . . . but he preached and shouted perpetually."¹

B. A male, æt. 33, "furious and dangerous; . . . restless, noisy, and destructive" on admission, but subsequently became quiet and harmless. During life he complained of no pain, and had no cough. Immediate cause of death was, nevertheless, hydrothorax. Post-mortem examination revealed the fracture of seven ribs, the appearances proving that the fractures here also had occurred *prior to admission*.

In neither of these cases was any lesion of the *ribs* either diagnosed or suspected during life. "Neither of the two would have been known without post-mortem examination." These and similar cases also illustrate the fact that—

1. *Surgical injuries sometimes occur among the insane without external marks of violence*;² and that—

2. *Serious lesions frequently exist without relative symptoms during life*.³

None but those habitually engaged in the management of lunatics can be aware of the extent to which accidental or self-inflicted injuries occur, or of the exceptional character of these injuries. They are exceptional in so far as it is (1) frequently difficult to understand how they *could* have been inflicted [I refer to cases in which ill-usage by attendants has been impossible]; and (2) in so

¹ Report of the Provincial Lunatic Asylum, Toronto, for 1862, pp. 13-15. The same case is also reported in the American Journal of Insanity for April 1862 (*vide* Journal of Mental Science, vol. viii. p. 585). It is there stated, in addition, that the patient was "tall and powerful," and that the "fractures ranged in a straight line, as if all caused by one blow; or, most probably, by a fall on some hard-edged substance."

² *Vide* 34th Report of the Murray Institution, p. 33.

³ *Vide* 31st Report, p. 13; and 34th Report, p. 36, of the Murray Institution.

far as serious lesions may be developed without the usual accompanying or proportionate physical indications or vital symptoms of any kind. Thus, I have known almost all the ribs of a young man's side broken without a single *outward* indication, or the exhibition of any kind of *symptom*. No complaint ever emanated from the patient; there was no bruise-mark, no lung-symptom, no indication of the slightest suffering from first to last. Nor was it ever discovered how the injury was inflicted. The fractures were detected accidentally by manual palpation. The patient was confined to bed for some days, his thorax tightly swathed in flannel merely as a precautionary measure; but no chest or other symptoms were ever developed, and the patient never could comprehend why he was confined to bed and swathed in flannel!

It is not surprising that, from ignorance of such facts, mere surgical experts, unacquainted with the peculiarities of injury or disease in the insane, should occasionally express, in courts of law, opinions that are calculated to do great injustice to the attendants of lunatic asylums. Dr Workman is very severe, though not too severe, on certain recent exhibitions of this kind in London. Thus, he says, "It has been incontestably proved that lunatics afflicted with general paralysis, or with other forms of intense cerebral disease, may sustain severe and extensive osseous or other lesions, without manifesting the slightest perception of pain or impairment of muscular activity." Nevertheless, "in one of the English cases, . . . two surgeons gave testimony to the effect that no person having two or more fractured ribs *could* be free from pain or freely use the costal or other respiratory muscles! *Ne sutor ultra crepidam!* Before delivering opinion on any question relating to insanity, or to the insane, medical practitioners would do well to acquaint themselves with the subject on which they are to testify."¹ . . . "Eminent medical gentlemen who have not spent their lives in the practical study of insanity, would act very prudently in abstaining from rash deliverances in all questions [relating to the malady] in which they find themselves in antagonism with those better qualified to give a correct opinion." Until the peculiarities of accident and disease among the insane are generally recognised, and until juries cease to be guided by the opinions of such experts, who are not qualified to give opinions of any real value, "how can we hope (as alienists) to protect ourselves from the fallacies of their testimony, whether before the tribunals of justice, or the more terrible ordeal of public judgment—a court whose revisions of error hardly ever come in time to reinstate its victims in the position of innocent, much less of meritorious, men?"² I quite agree with Dr Workman as to the little value to be attached to the opinions, as applied to the insane, of surgeons in ordinary practice, who are unacquainted, by personal experience, with the peculiarities of surgical

¹ Asylum Report, pp. 14, 15.

² Journal of Mental Science, vol. viii. pp. 582-584.

injuries in lunatics. Having myself had frequent occasion to hold consultations with surgical practitioners in cases presenting surgical difficulty in my own practice, I have found their opinions too often not only useless, but absurd; because the procedure or appliances that are proper in the case of a quiet sane patient, who co-operates with his surgeon in the efforts made for his recovery, are not equally applicable—indeed, are sometimes singularly inapplicable—in that of a violent, restless, destructive maniac, who applies all his strength, perseverance, and ingenuity to thwart the procedure intended for his benefit.

The two preceding classes of cases refer to the *non-detection*, during life, of rib-fracture, or of the osseous fragility on which such fracture may depend; but there is another interesting group of—

III. *Cases of Rib-Fracture detected on admission into Lunatic Asylums*, in which the discovery of such injuries is due to the medical examination of entrant patients that is now generally made in lunatic asylums in all parts of the world. There are few asylum physicians of any experience who have not met with instructive cases of this kind,¹ and who are not quite alive to the policy of making such entrance examinations, in order to guard themselves or their subordinates against the accusations that are sure to be made in the event of the discovery of such injuries as rib-fracture *subsequent* to admission. Some instructive instances of rib-fracture so detected are given in the Annual Reports of the New York State Lunatic Asylum at Utica. Thus, Dr Gray, who is physician-in-chief of the said asylum, as well as editor-in-chief of the “American Journal of Insanity,” reports, among the admissions of a single year, one case of fractured clavicle, one of fractured ribs and sternum, and one of fracture of the arm—all in acute mania. He adds the important particulars that, in no case, were these injuries produced by intentional violence; or, in other words, they were not attributable to mal-usage by attendants, but to accident or self-inflicted injury. In no case did the patient complain of pain or injury; the fact of bone-fracture existing at all being unsuspected either by patients or friends till the medical examination was made by the asylum physicians. “The person who had a fractured clavicle was very wild and boisterous, and moved his arm in every direction; complained of no pain, and challenged those about him to fight. The first day we were unable to bandage him; and, even after we succeeded in this, he tore off the bandages, and tore up his clothing and bedding; *notwithstanding which*, the bone united in the usual period, and without any unfavourable symptoms.”²

In another year, he describes the following two cases:—“One had, in jumping from a window at home, under delusions, fractured his sternum and clavicle, and driven down his neck into his chest, pushing out the upper portion of chest and vertebral column so as

¹ Vide 32d Report of the Murray Royal Institution, p. 10.

² 20th Report (for 1862), p. 15.

to shorten himself about two inches.”¹ The other was a male, æt. 53, admitted in a state of high maniacal excitement (restless and noisy). There were bruise-marks on the chest, and emphysema was rapidly developed. Rib-fracture was suspected, but proper examination of the thorax was rendered impossible on account of his restlessness. He died from hydrothorax. The post-mortem examination proved the correctness of the diagnosis as to rib-fracture, there being five ribs broken on one side and four on the other—the sternum also being fractured.²

Such cases as the foregoing show how unjust and absurd it is to ascribe all rib-fracture in the inmates of lunatic asylums to deliberate *violence by attendants*. I believe that, as a body, asylum attendants lie under most unmerited opprobrium for supposed brutality or roughness in the management of their charges—especially of such as are unusually troublesome by reason of filthy habits, insubordination, assault, destructiveness, mischief, or otherwise. Attendants would not be human, did they not occasionally lose their temper or self-command, and allow themselves to be irritated into acts that they very speedily regret, and for which they have frequently most inadequately to atone. But, even in the exceptional cases in which faults of commission occur, far too little allowance is made for the provocations to which they are subjected. My own experience has led me, on the whole, to be equally surprised and gratified at the forbearance and kindness they exhibit—a forbearance and self-control infinitely greater than that which is sometimes exhibited by their superiors in office, notwithstanding the professions by the latter—*usque ad nauseam* sometimes—that *their* rule of practice in dealing with lunatics is that combination of all the virtues embraced in the so-called “Law of Kindness!”

Rib-fracture may legitimately be regarded as one of the many fruits of the *non-use of mechanical restraint* in cases where it is really required. There can be no doubt that many, at least of such cases, would never have occurred had the “camisole” (*vulgo*, the old “straight-waistcoat”) been timeously employed, or had any other efficient means been used to confine the arms, legs, or body.³ Since, however, the Conollyan era in the history of Hanwell, it has been deemed culpable in this country to make use of this or other simple *mechanical* means of preventing self-injury or injury to others.⁴ There is, and there has long reigned in England, a *tyranny of public opinion* on the subject of non-restraint in the treatment of the insane—a tyranny which, among other bad effects, prevents the superintendents of its asylums acting upon their individual judgment in individual cases as regards the imposition of mechanical restraint.⁵

¹ 27th Report (for 1869), p. 15.

² Utica Asylum Reports, 27th (for 1869), p. 77.

³ *Vide* 37th Report of the Murray Institution, p. 12.

⁴ *Vide* 39th Report (1865-8), p. 15.

⁵ *Vide* Dr Kellogg, of the New York State Asylum at Utica, in his Notes of a Visit to the Asylums of Europe: American Jour. of Insanity for Jan. 1869.

The substitution of *personal* for mechanical restraint—restraint by *attendants* instead of by mechanical appliances—has led to incessant personal struggles, during which it would have been strange had rib-fracture not occasionally occurred in common with other injuries of even a more serious character. The terrorism which is in England exerted on asylum authorities by the bugbear of public opinion, the anathemas of the fourth estate, and the censorship of the Board of Lunacy, is a very real one¹—in the eyes especially of strangers, who can contrast it with the manly independence that exists on the same subject, as regards both action and opinion, in America! England boasts of being (as regards the treatment of its insane) the Country of Non-restraint; but it will repudiate, I do not doubt, the addition, that it is equally entitled to the designation of the Country of Fractured Ribs; and it will, I dare say, indignantly deny that there can be any proper connexion between the non-use of mechanical contrivances against self-injury, or against the provocation of attendants beyond the bounds of their self-command, and the frequency of rib-fracture, in common with many minor or major injuries!

Nevertheless, I believe that, in relation to the causation of such injuries, we must regard, as the *real offenders*, not the poor defenceless attendants, who are at present saddled with the whole of the guilt: but the following categories of persons or institutions, viz.:—

1. Such men as Conolly and Gardiner Hill, who have promulgated the absurd and mischievous dogma, that in *all* cases mechanical restraint is unnecessary and improper.²

2. All who have adopted this dogma of *non-restraint*, who have

¹ That it is real, is admitted by those of the English alienists themselves who are manly enough to speak out—on a subject on which I have found them more given to whisper with bated breath, as if it were treason even to breathe aspirations or opinions contrary to that worst of all tyrants or despots—Public opinion! One English asylum physician, writing me in 1869, says:—"I quite agree with your remarks about the *terrorism* that the Lunacy Commissioners exercise in England. *All independence* is really extinct now in this department" (lunacy practice). Another, writing still more recently (1870), remarks:—"In the present state of feeling on the subject of restraint and cruelty in asylums, one can scarcely be too much of a *coward* if he would avoid imputations, whose groundlessness is only equalled by their ridiculousness. . . . On the head of what might be called the *restraint system* as applied to medical men" (engaged in lunacy practice) "see the correspondence between Dr Shepard and the Commissioners in Lunacy, and you will easily understand how difficult it is, when there is so much spurious sentiment abroad, to avail one's self of a useful means of treatment, or of the exercise of a little native discretion!"

² "The *Entire Abolition of Mechanical Restraint in the Treatment of the Insane*," is the title of a volume published by Dr Gardiner Hill in 1857 (London), which contains the following enunciation of his views:—"Restraint is *never* necessary, *never* justifiable, and *always* injurious in *all* cases of lunacy whatever!" (p. 52.) Now Conolly professes to have followed Hill, and the school which Conolly may be said to have founded thus adopts as its creed a proposition, which is (to say the least of it) much too sweeping and dogmatic, as I hope elsewhere to be able to prove.

imbibed the extreme views of Conolly and Hill, constituting them their creed *quoad* the management of the insane: including especially—

- (a.) The general public.
- (b.) The general newspaper press, with certain exceptions.
- (c.) A section, at least, of the medical press, such as the "Journal of Mental Science"¹ and the "Lancet."²
- (d.) The Board of Lunacy.

I do not, however, further enter at present upon this delicate subject, having collected materials for a separate essay on "The Theory and Practice of Non-restraint in the Treatment of the Insane."³

ARTICLE VIII.—*On the Action of the Cobra Poison.* By J. FAYRER, M.D., F.R.S.E., C.S.I.; Surgeon, Bengal Army; Professor of Surgery in the Medical College of Bengal.

(Continued from page 340.)

TWENTY-SIXTH SERIES.

Present—Drs Fayrer and Ewart, and Mr Sceva.—23d April 1870.

EXPERIMENT No. 1.—The external jugular vein of a dog was exposed, and liquor potas. 3ss., water 3iii. injected with the hypodermic syringe at 3.14 P.M. At 3.28, the dog seemingly unaffected by the alkaline injections, two drops of poison, squeezed out of the poison-glands of a cobra (*Bansbunniah keautiah*), sickly and casting its skin, were diluted with water and injected hypodermically into the dog's thigh. This snake had been deprived of its fangs, and could not bite. The dose of poison was very mild. 3.35.—The dog seems restless and uneasy—is whining. 3.36.—Apparently very slightly affected. 4.10.—Is restless; sits down, looks listless and tired. 4.15.—Liquor potas. 3ss., aq. zi. injected into jugular vein; no effect produced, the dog did not seem to feel it in any way. 4.20.—Liquor potas. 3ss., aq. 3ii. poured down its throat. 4.26.—Restless and uneasy; is sick, slightly convulsed; respiration hurried; sardonic grin. 4.30.—Cannot walk; profusely salivated,

¹ The narrow views of the latter on this subject are in marked contrast to the more liberal and enlightened ideas of its predecessor and rival,—the "Journal of Psychological Medicine," as edited by Dr Forbes Winslow.

² In favourable contrast are the ideas of the "Medical Times and Gazette," as expressed (*e.g.*) in vol. ii. for 1868, p. 365; and in vol. i. for 1869, p. 254.

³ Meanwhile my opinions regarding the *Disuse of Mechanical Restraint*, and the substitution for it of *Restraint by Attendants*, may be found expressed in (1.) the 11th Report of the Board of Lunacy for Scotland, Appendix, pp. 70 and 272. (2.) The following Reports of the Murray Institution:—39th, p. 15; 37th, p. 12; 32d, p. 13. (3.) The following separate papers:—(a.) On "Temporary Insanity," Edin. Medical Journal, vol. xi. (1865), p. 449. (b.) On "Typhomania," Edin. Medical Journal, vol. xiv. (1868), p. 333.