but, then, no medical man neglects to treat otorrhoea under any circumstances whatever. The author suggested another hypothesis, the possibility that the aural disease led to disease in Hitzig's and Ferrier's Region; for, in some cases, the aural disease was associated with epileptiform convulsions, starting in the hand, face, or foot of the opposite side. In one such case, the author had found a large tubercular or scrofulous tumour of the hemisphere on the side of the ear-disease and on the side opposite the convulsions. He thought it possible that the disease is sometimes local softening from venous thrombosis, the convulsions depending on instability of grey matter around the part softened. He had no direct evidence of this, but he thought he had some indirect evidence of it. He related a case in which a man who had phosphorus necrosis of the jaw had, during an acute illness, frequent epileptiform affections affecting the left side of his face, both sides of the thorax, and slightly the left arm. (In passing, the author remarked that this case was one of those verifying Broadbent's now well known hypothesis, that there is a double representation in the brain of the bilaterally acting muscles.) In the intervals of the attacks, there was paralysis of the face almost as complete as in ordinary Bell's paralysis of the face. At the necropsy, there was, although not ear-disease, yet an equivalent state of things, there being pus in the right lateral sinus, and from this a vein with creamy contents was traced to the part most diseased of the right side of the brain; about the anterior end of the Sylvian fissure, there was purulent softening and red softening. As the lesions were more wide-spread, and as the case was acute, the evidence was only very indirect towards the interpretation of chronic cases, but was, the author thought, worth consideration in that regard.

8. *Aural or Auditory Vertigo or Menière's Disease.*—The author believed that almost any kind of ear-disease would cause paroxysms of vertigo and reeling, with faintness and vomiting. He stated briefly various kinds of disease of the ear he had seen associated with the paroxysm, expressing his opinion that the paroxysm always depended on trouble of the auditory expansions in the labyrinth, whether from actual disease therein or disturbances from without. He insisted that besides cases with paroxysm, these were, so to speak, chronic cases. With ear-trouble, it was not a very uncommon thing to find slight giddiness and trifling reeling when the patient walked. These cases had, he thought, not received sufficient attention. He referred to the case of a medical man, deafness of the right ear occurring immediately after the discharge of a heavily loaded gun; the patient always afterwards tended to the left; to the case of another medical man, who, besides having paroxysms with right-sided deafness was always giddy if, when lying down, he turned over from right to left; to the case of a patient, the subject of Menière's disease, who would become giddy and feel as if pushed forwards whenever she suddenly bit anything crisp. The explanation suggested of this last case was, that the symptoms were, owing to contraction of the tensor tympani, a muscle acting along with the masticatory muscles. The paroxysms were generally explained by the laity, and not unfrequently by medical men subjects of the affection, as being caused by stomach and liver derangement. The author urged that the mere concurrence of deafness with the paroxysmal or chronic symptoms should not alone settle the diagnosis. He passed in brief review the most characteristic symptoms of five great varieties of vertigo: (1) Stomachic, (2) nervous (often sexual) exhaustion, (3) ocular, (4) epileptic, (5) aural or auditory. Great attention should be paid for diagnosis to what Knapp has called the limitation of the "field of audition", to the loss of perception of certain notes; if the loss were of some intermediate notes, it would, the author thinks, point to disease in the cochlea. He tried to show how we should distinguish betwixt a case of chronic unsteadiness from aural disease, that from cerebellar disease, and that from ocular palsy. Finally, he gave his speculations as to the *modus operandi* of the ear-disease. There were two sets of symptoms: a. "Vital" (faintness, perspiration, irregularity of pulse, etc.); b. Locomotor (vertigo with or without reeling). He attributed the former to disturbance of or actual disease in the cochlear division, the latter to disease or disturbance of the semicircular canal divisions; the former division was, he suggested, chiefly afferent to the medulla oblongata, the auditory nucleus having (Lockhart Clarke) close connection with the vagal and spinal accessory nuclei; the latter division, he thought, represented that part going, according to Lockhart Clarke, to the cerebellum. The "vital" and locomotor symptoms were due to disturbance of the medulla oblongata and cerebellum respectively. He referred to Goltz's theories, to the experiments by Vulpian and others on the semicircular canals. He mentioned that Pierret had recently spoken doubtfully as to the existence of relations betwixt the auditory nerve and the cerebellum. Cyon has recently found that irritation of each of the semicircular canals is followed by a particular ocular movement—a very significant thing towards the interpretation of auditory vertigo.

HOSPITALISM IN COTTAGE HOSPITAL PRACTICE, IN RELATION TO SIR JAMES SIMPSON'S THEORY.

By HENRY C. BURDETT, The Seamen's Hospital, Greenwich.
Late General Superintendent of the Queen's Hospital, Birmingham.

ON the eve of the publication of my book on *Cottage Hospitals*,* and at the request of many medical friends, I venture to submit the following statistics bearing upon the mortality in cottage hospital practice after the major operations—the various amputations of the limbs—for the consideration of the profession. I am strengthened in my resolve to adopt this course by the knowledge that I am justified in claiming for the annexed statistics the closest attention, because I can vouch for their careful preparation and accuracy. The accuracy of Sir James Simpson's statistics of the results of amputations in country and private practice has been seriously impugned by Callender, Holmes, and other authorities, chiefly on the ground of the impossibility of proving the reliability of the sources from which they were derived. No such doubt can exist with regard to the figures I have prepared. The cases I give can be definitely verified, as they are derived from the books kept by the medical staff of the different cottage hospitals mentioned in the table. Each return is signed by the honorary medical officer who has kindly furnished it; and, in the majority of instances, each surgeon has vouched for the accuracy of his own cases.

Feeling deeply the importance of great care being exercised in the preparation of the annexed table, I have sent the following circular to one hundred and sixty cottage hospitals, with whose existence I am familiar.

The following is a copy of the form which was enclosed:

Result of Amputations of the Limbs in Cottage Hospital Practice.

Seat of Amputations.	Primary or for Injury.		Secondary, or for Disease.	
	No. of Cases.	No. of Deaths.	No. of Cases.	No. of Deaths.
Amputation of thigh ..				
Amputation of leg				
Amputation of arm				
Amputation of forearm ..				
Total				

Date..... Signature.....
Residence

REMARKS.

Note.—The cause of each death should be noted, if possible—viz., whether secondary hæmorrhage, shock, pyæmia, or other cause.

"The relative success of the graver operations in surgery as performed, first, in large town hospitals, and, secondly, in country cottage hospitals, has for years attracted much attention, and there is reason to believe that the mortality in cottage hospitals in the major operations is much less than in the London hospitals. With a view of settling this question at rest, and of proving the truth or fallacy of Sir James Simpson's theory, I shall feel deeply obliged if you will fill up the enclosed form with the results of all the amputations which you may have had in connection with your cottage hospital since it was first opened.

"However few may be the amputations of the limbs, an exact return from every cottage hospital will be regarded as a very valuable contribution to surgical statistics.

"I am anxious to make my book as complete as possible, and the return of the enclosed form in the course of next week, accompanied by any remarks as to the cause of death, and any special features of particular operations, will be esteemed a great favour."

In reply, I received answers from ninety-two cottage hospitals, in thirty-one of which no cases requiring amputations had been received, although the majority had had in addition to severe fractures, cases of herniotomy, lithotomy, extirpation of eyeball, removal of bone for necrosis, ovariectomy, excisions of knee, ankle, shoulder and breast, or other surgical cases of interest.

The cases of amputation in the sixty-one hospitals, which are given in alphabetical order in the following table, amount to three hundred and six, or one less than the number given by Mr. Erichsen in his book, as "all the amputations" which have been performed in his wards at University College Hospital from the foundation of the hos-

* *The Cottage Hospital: its Origin, Progress, Management, and Work.* London: J. and A. Churchill.

pital (a period of thirty-eight years). The average mortality in Mr. Erichsen's cases was twenty-five per cent., while it only amounted to eighteen at the cottage hospitals.

Table of Amputations and their Results—Primary or for Injury, and Secondary or for Disease—of the Thigh, Leg, Arm, and Forearm, performed in Cottage Hospital Practice by Country and Provincial Practitioners.

Nominal List of Cottage Hospitals.	No. of Beds.	PRIMARY.								SECONDARY.								Total.	
		Thigh.		Legs.		Arms.		F'arms.		Thigh.		Legs.		Arms.		F'arms.			
		Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.		
Ashford.....	6	..	..	2	1	..	..	1	..	..	..	..	..	..	..	..	..	3	1
Beccles.....	7	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	1	..
Bournemouth.	6	..	..	1	..	2	..	..	..	..	..	..	..	..	..	..	..	3	..
Bourton-on- the-Water...	8	1	1	..	..	..	..	2	..	..	..	..	1	..	1	..	..	5	1
Burford.....	6	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1	..
Bromley.....	10	..	..	..	..	1	..	..	1	1	..	..	..	..	1	..	..	3	1
Boston.....	5	1	..	1	..	2	1	1	1	..	..	..	..	..	..	..	..	5	2
Buckh'rst Hill	5	..	..	..	..	1	1	..	..	..	..	..	..	..	..	..	..	1	1
Bromyard.....	7	..	..	..	..	1	..	..	..	..	2	..	..	..	..	..	..	3	..
Crewkerne....	12	1	1	1	1	3	..	2	..	1	..	..	..	..	..	..	..	7	2
Cromer.....	6	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	1	..
Chesham.....	7	..	..	..	..	..	..	..	1	1	..	..	..	2	..	..	..	7	1
Cranleigh....	6	1	..	..	..	..	..	1	1	3	..	..	..	1	..	..	..	6	1
Cirencester....	4	..	..	..	..	..	..	1	..	4	..	..	1	..	..	..	..	1	..
Charlwood....	4	..	..	1	1	..	..	..	..	1	..	..	..	..	..	..	..	1	1
Dorking.....	12	..	..	..	..	1	..	..	..	4	..	..	..	..	..	..	..	2	..
Enfield.....	6	..	..	..	..	1	..	..	..	1	..	..	..	..	..	..	..	1	..
Erith.....	7	..	..	..	..	..	..	..	1	1	2	..	..	..	..	..	..	3	1
Fairford.....	8	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..	1	..
Fowey.....	8	1	1	1	..	..	..	..	..	3	..	..	..	..	..	..	..	5	..
Frome.....	10	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1	..
Hayes.....	5	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1	..
Hillingdon....	4	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1	..
Hatfield.....	8	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..	2	1
Broadoak....	8	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..	2	1
Jarrow-on- Tyne.....	11	3	2	6	1	..	..	1	..	..	..	..	..	..	..	..	..	11	3
Iver.....	7	..	..	..	..	..	..	1	..	..	..	..	..	1	..	..	..	2	..
Kendal.....	16	..	..	..	..	1	1	1	3	1	3	..	1	..	..	..	..	9	2
Ledbury.....	5	..	..	1	..	2	..	..	..	..	..	..	..	..	1	..	..	4	..
Lloyd, Brid- lington....	13	..	..	2	..	..	..	..	3	1	..	..	..	..	..	..	..	5	1
Litcham.....	7	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1
Marlborough (Savernake)	20	3	..	4	..	2	..	1	..	1	..	..	1	..	1	..	..	13	..
Mildenhall....	8	2	1	1	1	..	..	..	1	..	..	..	..	..	..	..	..	5	1
Malvern.....	12	..	..	2	..	..	..	..	5	3	..	..	..	..	..	..	..	10	..
Market Rasen	4	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	1	..
Milton Abbas.	6	..	..	..	..	..	..	1	..	..	..	..	..	1	..	..	..	1	..
Melksham....	6	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	1
Nth. Lonsdale	50	5	4	10	8	1	..	..	..	1	..	..	..	..	..	..	..	24	5
North Cam- bridgeshire.	23	..	..	..	2	..	..	2	1	..	..	..	..	..	..	..	..	4	1
Newton Abt....	8	..	..	..	1	1	..	..	2	..	1	1	1	..	..	..	..	1	1
Ottery St. Mary	7	..	..	1	..	3	..	..	2	..	1	1	1	..	..	..	..	8	1
Oswestry.....	8	2	..	2	3	1	2	..	..	..	..	..	..	..	..	..	..	9	1
Petworth.....	8	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..	..	1	1
Petersfield....	6	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..
Penryn.....	13	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	2	..
Ross.....	6	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	2	..
Royston.....	7	1	1	..	1	..	..	..	3	3	1	..	..	3	..	..	..	11	2
Reigate and Redhill....	12	..	..	1	1	2	..	1	1	2	..	..	..	..	..	..	..	7	2
Rugely.....	10	1	1	2	1	..	..	1	2	1	..	..	..	..	..	..	..	6	3
Ross Memo- rial, Dingwall	4	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	1	..
Ruabon.....	6	1	1	4	..	..	..	..	..	..	..	..	1	..	..	..	..	6	1
Stockton-on- Tees.....	9	1	..	23	7	7	1	5	2	1	2	1	..	..	..	..	..	40	10
St. Albans....	7	1	1	2	..	..	..	3	1	..	..	..	..	..	..	..	..	7	1
Seacombe....	8	1	1	1	1	..	..	..	..	..	..	2	..	..	..	..	..	4	2
Stratton Corn- wall.....	5	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	1	..
St. Leonards, Sudbury....	20	1	1	..	2	2	2	2	2	1	..	..	..	1	..	..	..	9	1
St. M'ry's Bur- ford, Tenbury	8	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	1	..
Tewkesbury....	9	1	1	5	4	5	6	5	6	5	1	..	..	..	..	..	..	26	1
Trowbridge....	8	..	..	..	..	3	1	..	..	..	..	..	..	..	..	..	..	4	1
Ulverstone....	12	..	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	1	1
Warminster....	7	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	1	..
Wickham.....	6	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..

To facilitate comparison, I have prepared the following summary of the above table on the plan adopted by Sir James Simpson.

1. *Total Mortality of all Amputations*, in sixty-one cottage hospitals, having a total of 553 beds; total number of cases, 306; total number of deaths, 55; or 1 in every 5.6 died, or 18 in every 100.

2. *Mortality of the Individual Amputations*.—When we include

all the amputations of the thigh, leg, arm, and forearm, the results are—

Thigh Cases 80. Deaths 27 or 1 in 5.1, or 19.6 per cent.
 Leg „ 108. „ 18 or 1 in 6.2, or 16 „
 Arm „ 64. „ 7 or 1 in 9.3, or 10.7 „
 Forearm „ 54. „ 3 or 1 in 17.7, or 5.7 „

3. *Mortality from the Amputations that were Primary or for Injury*.

Thigh Cases 31. Deaths 18 or 1 in 1.7, or 58 per cent.
 Leg „ 76. „ 15 or 1 in 5.0, or 20 „
 Arm „ 53. „ 7 or 1 in 7.7, or 13 „
 Forearm „ 45. „ 3 or 1 in 14.3, or 7 „

4. *Mortality from the Amputations that were Secondary or for Disease*.

Thigh Cases 49. Deaths 9 or 1 in 5.5, or 18.4 per cent.
 Leg „ 32. „ 3 or 1 in 10.7, or 9 „
 Arm „ 11. *Nil.*
 Forearm „ 9. *Nil.*

These tables will be incomplete unless the cause of death in each case is recorded. Thus I find that, in the primary amputations for injury,

Of the Thigh Cases—13 died from shock, 1 from pyæmia, 1 from enteritis, 1 from inflammation of the lungs, and 1 from delirium tremens. In the remaining case, a compound fracture just above the knee, with destruction of the femoral artery, not detected at the time of reduction, mortification of the limb set in, and amputation was performed as the last resource.

Of the Leg Cases—6 died from shock, 3 from pyæmia, 1 from tetanus, 1 from delirium tremens, 1 from pneumonia; in 3 the causes not stated.

Of the Arm Cases—4 died from shock, 1 from pneumonia, 1 from tetanus; in 1 the cause of death is not stated.

Of the Forearm Cases—2 died from shock, and 1 from tetanus.

In the secondary amputations for disease—

Of the Thigh Cases—3 died from exhaustion, 2 from secondary hæmorrhage, 1 from shock, 1 from pyæmia; and in 2 the cause is not stated.

Of the Leg Cases—2 died from exhaustion; and in 1 the cause is not stated.

Where I have remarked that the cause of death is not stated, the cases were treated at the Stockton Hospital, the books of which give no information on the point.

Of the five cases of pyæmia, 2 occurred at Stockton, 1 at Crewkerne, 1 at Ashford, and 1 at the Lloyd Cottage Hospitals.

It will be observed that the great mortality in the primary amputations of the thigh is due to the fact, that two-thirds (12) of the deaths were caused by shock, consequent upon the severe injuries which the patients had sustained.

I purposely refrain from giving any other statistics than those which I have obtained from the Cottage Hospitals, as those prepared by the late Sir James Simpson, Mr. Erichsen, and other authorities are well known to the profession, and can easily be referred to. It must suffice for the purposes of this paper to point out that, according to the most recent authorities, the mortality in General Hospital practice, after the major operations, averages: In England, 41.6 per cent.; in Paris, 58.8 per cent.; in Glasgow, 39.1 per cent.; in Edinburgh, 43.3 per cent.; giving an average mortality of 45.7 per cent.

CIRRHOSIS OF THE LIVER: ALCOHOLIC PARALYSIS.

By CHARLES H. ROBINSON, F.R.C.S.I.,

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THE following case I believe to be of interest, as showing the rapid manner in which alcohol may paralyse the nervous centres and destroy life in a comparatively short time. This is my chief reason for detailing a case, which, so far as my experience goes, and as well as I can learn from writers on the subject of chronic alcoholism, is extremely unusual as regards its speedy termination.

Mrs. K., aged about 37, first came under my care in February 1876, suffering from irritation of the stomach, flatulence, loss of appetite, and vomiting, which subsided under treatment, but again recurred in about a fortnight, but did not continue long. In the following June, I was again in attendance, when I found her in rather delicate health, suffering a good deal from vomiting and with slight tremor of the hands. This last aroused my suspicions, and I instituted inquiries as regarded the possibility of the attack being due to stimulants taken in excess,