does not degenerate; but the assumption that there is such a thing as real vaccine virus proves that there may be that which is unreal; and, therefore, there must be several kinds and different qualities of vaccine virus.

In the remaining part of Mr. Brown's fifth letter there does not seem to be anything requiring animadversion, as it is principally occupied in upholding a position in which we both agree, though for a very different purpose—viz., that the efficiency of the vaccine has not degenerated. I have said we both agree in this position, but with widely different views. Mr. Brown believes it for the purpose of proving this syllogism:—

The vaccine has not degenerated.

It does not afford permanent security against small-pox.

Therefore, it has been imperfect from the beginning.

I, on the contrary, accept Mr. Brown's testimony for the purpose of upholding a very opposite conclusion, which might be thus stated:—

Vaccination has afforded the best possible security against the malignity of small-pox.

The efficiency of the vaccine has not degenerated.

Therefore, vaccination continues to afford the best possible security against the malignity of small-pox.

In my next communication I shall pass to the consideration of Mr. Brown's fifth letter; and, in the mean time, I am,

Faithfully yours,

W. NEWNHAM.

Farnham, May 24, 1842.

STATISTICS OF AMPUTATIONS PERFORMED IN THE PARISIAN HOSPITALS. By M. MALGAIGNE.

(Concluded from page 149.)

CAUSES WHICH INFLUENCE THE MORTALITY AFTER AMPUTATIONS.

The first question which M. Malgaigne endeavours to solve, is the influence exercised by the cause which gave rise to the necessity of operation. Amputations performed after injuries are more dangerous than those performed in consequence of disease.

Thus, in a total of 789 amputations, we have 524 after disease, 193 deaths, or 38 per cent.; 265 after injuries, 130 deaths, or 49 per cent. This difference is more striking if we separate the capital operations from the minor ones. The mortality then is for capital operations, after disease, 48 per cent; after injuries, 64 per cent. For minor operations, after disease, 7½ per cent.; after injuries, 15 per cent. Here, then, the influence of a traumatic cause seems more powerful with respect to the minor than the capital operations.

The question, then, appears to be clearly settled, but it leads to a much more important one—viz., that of primary or secondary amputations after injuries. The statistics on which M. Malgaigne computes the relative mortality of amputation, under these two conditions, are 26 amputations of the thigh, and 43 of the leg.

Of the 26, 16 were immediate and 10 secondary; in the former case, there were 12 deaths; in the latter, 6. Of the 43 amputations of the leg, 33 were immediate, giving a mortality of 22; 10 were secondary, with a mortality of 7. If we add all the cases together we have 49 immediate, with 34 deaths; 20 secondary, with 13 deaths. The only conclusion, however, which M. Malgaigne draws, is, that the question requires further examination. Of the causes which render amputation of the thigh necessary, compound fracture from gun-shot wound is one of the most frequent. Most surgical writers advise immediate amputation, but M. Malgaigne is of a different opinion. In 1814, M. Marjolin performed 14 amputations of the thigh for gun-shot wounds, and saved only *one* patient. Again M. Ribes examined the 4,000 invalids collected together at the Hotel des Invalides, without finding a single one who had had fracture of the femur with wound of the surrounding soft parts; nor was there a single patient whose limb had been amputated for fracture of the middle of the thigh. Hence, all the soldiers sufferings under this accident had either died on the field of battle or after operation.

Influence of Age.

Having shown the influence of sex to be in favour of the female, and particularly that the minor amputations are almost without danger in the female when compared to the male, M. Malgaigne examines the influence of age. Before entering on the subject he refers to lithotomy, which may be compared, in some respect, to amputation for disease. During the six years, 1836 to 1842, the number of operations for stone performed in the hospitals of Paris, with their results, was,

Ages	2 to 5	5—15	15—20	20—35	35—50	50—65	65—80
Operations*	6	3	28	4	13	4	7

Hence, in 75 operations for stone we have 28 deaths; more than a third—a proportion far different from that announced during the discussions on lithotomy and lithotrity.

The influence of age on amputations is shown in the following tables:—

CAPITAL AMPUTATIONS AFTER DISEASE.

Ages	2—5	5—15	15—20	20—35	35—50	50—65	65—80
Thigh ....	....	13 4	24 12	50 32	19 16	8 8	1 ..
Leg.....	2 1	9 ..	11 6	24 12	19 7	13 9	2 2
Foot .....	....	3 ..	4 ..	7 ..	3 ..	3 1	1 1
Shoulder ..	....	....	1 ..	....	2 2	1 1	....
Arm .....	....	6 3	5 1	21 9	8 3	4 2	3 1
Fore-arm ..	....	1 1	....	3 1	4 1	4 2	1 ..
Total :							
Males	2 1	32 8	45 19	105 54	55 29	33 23	8 4
Females ..	2 1	25 7	21 9	23 9	17 11	7 6	3 1
Both sexes	4 2	57 15	66 28	128 63	72 40	40 29	11 5

* The number of operations (in this and the other tables) is represented by the number to the left of the column: that of deaths, by the number to the right.

MINOR AMPUTATIONS AFTER DISEASE.

Ages	2-5	5-15	15-20	20-35	35-50	50-65	65-80
Males		7 ..	23 1	42 3	23 5	10 ..	1 ..
Females....		9 ..	4 ..	7 ..	10 ..	7 1	3 1
Total		16 ..	27 1	49 3	33 5	17 1	4 1

Thus, from the above tables, it appears that in young children, the mortality amounts to one half of those operated on; the next period is the most favourable one; we have then a period of decline, until we come to the most unfavourable one, that comprised between the ages of 50 and 65. Between 65 and 80, however, we have a period more favourable than the two preceding ones.

If we examine amputations performed after injuries (traumatic) we find, from the tables of M. Malgaigne, that the mortality is excessively great amongst children. Thus, of 25 capital and minor amputations after injuries, performed on children up to 15 years of age, no less than 16 proved fatal; the mortality diminishes from 15 to 20; then from 20 to 35, and the most favourable period is from 35 to 50. The following table shows that the mortality of hernia, follows the same rule:—

MORTALITY IN OPERATIONS FOR HERNIA.

Ages	2-15	15-20	20-35	35-50	50-65	65-80
Males.....	2 2	2 2	2 29	16 26	10 22	18 19
Females .....	....	1 ..	7 4	37 17	38 28	37 22
Total	2 2	3 3	2 36	20 63	27 60	46 56

Influence of Season.

The season is supposed by many surgeons of high authority, to exert some influence on the success of operations. Dupuytren preferred the spring, and after it, autumn. M. Velpeau is of the same opinion. Statistics, however, are quite at variance with the generally received ideas on this point. Without following M. Malgaigne through the numerous tables which he gives, we may mention that he shows clearly that the mortality is least in winter for adults, but greatest for young subjects. This, however, only applies to operations performed for disease. The mortality of amputations after injuries does not seem to be influenced in the slightest degree by the season of the year during which they are performed.

Comparative Influence of Hospitals on the Mortality after Amputations.

Under this head M. Malgaigne investigates a highly curious question, but as it cannot interest us much, we shall only mention a few points which he has established. His statistical researches embraced nine of the principal Parisian hospitals. The Hotel-Dieu has been generally thought to be very fatal to those who have been operated on within its walls; but amongst the nine hospitals it occupied the sixth place; la Charité the second place for amputations for disease; the third for amputations after injuries. In the most successful hospital the mortality for the first class of amputations was 1 in five; in the least suc-

cessful 9 in 10; thus making the enormous difference of from 20 to 90 per cent.

For the second class of amputations (after injuries), it was 3 in 10, in the most successful hospital; 5 in 5 in the least successful, showing a difference of from 30 to 100 per cent.

If we endeavour to ascertain the cause of this extraordinary difference of mortality after amputations in the different hospitals, we arrive at some very curious and interesting results.

The mortality after amputations is not explained by the general mortality of the hospital, nor by the cost of each patient, for the mortality was least in the hospital which expended least, and greatest in that where the cost of each patient was greatest. The topographical position of the hospital did not explain the point, for the most fortunate and the least successful hospital, were placed in exactly the same circumstances with respect to position. Neither did the quantity of air, light, &c. in the wards of the hospitals account for the difference mentioned. The only point which the researches of M. Malgaigne have enabled him to determine relative to the question is, that the mortality diminishes in proportion to the small number of patients entrusted to the care of each surgeon.—*Arch. Gen. de Med.*, May, 1842.

PROVINCIAL MEDICAL JOURNAL

SATURDAY, JUNE 11, 1842.

The various questions connected with public health are gradually forcing themselves on the attention of the executive government of these realms.

In the absence of any responsible body corresponding to a board of health, or of any laws or regulations appertaining to the sanatory condition of the people, it is only on extraordinary occasions and as a result of private exertion that we have to expect any attempt to correct the innumerable abuses engendered by neglect, apathy, or ignorance. A law for the regulation of the medical profession has, indeed, been promised to us, and the "long-looked-for must come at last;" in the mean time, the important duty of protecting the lives and health of her Majesty's subjects is thrown on a few benevolent members of the House of Commons. The government appears ready to adopt suggestions, but either through incapacity, indifference, or want of time, studiously avoids taking on itself the initiative of any proposition connected with the public health.

The proceedings in the House of Commons on Tuesday last afford ample illustration of what we have just advanced.

The question of the employment of children under ground was brought forward by Lord Ashley, in a speech which excited the deepest interest on all sides of the house, and was received in a manner which clearly proves that when abuses of a similar kind are