intrinsic natures of the services, it may well be a source of marvel and admiration that there should be only four deaths in the navy against one in the army; but out of this the question arises, why the army ratio should stand so high as it does relatively to that where lives are passed on the sea. But, if the appalling calamity that fell on 478 persons on board the *Captain* were superadded, the naval ratio would be raised from 1.72 to 2.46 per 1,000. For the reasons already given, the *Captain* has been excluded from the ordinary ratios.

Lastly, the deaths by accident from "all other causes combined" are as 1.16 to .435 per 1,000, or nearly as 11 to 4. This ratio, together with that of drowning, are the criteria which establish beyond question the greater risks of deaths from accidental causes to which seamen are exposed beyond the men of the army; and the reasons for its comparative excess are to be found in the lists of primarily fatal injuries given prefatory to the estimation of the ratios in both services.

Notwithstanding this proved inequality of the navy on the ground of the greater mortality by accidental violence, it is an irrefutable fact, that the causes of disease to which the army is exposed beyond the navy render service in it more inimical to life, or more subject to death-causes, than service in the navy, in the proportion of 17 to 12. Having in view the main features of this disparity, it may be hoped that, by increasing our efforts to mitigate in the respective services the causes of increased mortality peculiar to each, very much may still be done to render the lives of seamen and soldiers more secure than they are at present. Enforced attention to sanitary measures in the army and navy has already produced very marked improvement in their health-conditions, and a decrease of the mortality in both services, as shown by comparison of the later annual statistics with the average ratios of the past, affording us the highest encouragement to rely on statistics, and to persevere in the direction they point out. Greater care than ever before is devoted to the ventilation of ships, and to the diet and regimen of their crews, which is quite equalled in the army by improvements in barracks and in the selection of healthy sites for camps, to which we owe the decrease of death-by-disease rates which marks our era, in which it is deeply felt by all authorities that where by careful treatment we may, as practitioners, save hundreds, the enforced laws of hygiene will protect thousands from destructive diseases; and we are not forbidden to hope that, with reference to the casualties which present so large a summary of deaths by violence, there is a margin within the inevitable in which the lives of men might, by equal precautions adapted to that end, be rendered safe. Seamanship, like railway travelling, will ever exact an indefinite amount of sacrifice of life; and so imbued is the public mind with a sense of that necessity, that nothing short of a great wreck or a railway disaster creates any emotion. It must, however, have fallen to the lot of most dwellers on the depths of the ocean to see life needlessly sacrificed, where there is no coroner's law to investigate the circumstances and to assign blame where due. Where obedience is the fundamental principle, guiding men implicitly by the orders of their officers, it behoves those who command to dwell on these facts, so that their rule of action shall bear always the impress of foresight to prevent accidents, so far as may be, in a service where unusual risks are inevitable, but at the same time mitigable, as is proved by their greater frequency in some ships than in others. In the streets of cities, the rarity of fatal accidents depends much on the vigilance of police; and likewise it is not beyond probability that their frequency might be reduced in the navy, if special tabulated returns, not less minute in details than the returns of punishments, were required from every ship in commission.

Hygiene is the science of saving life by obviating the causes of death. As applied to diseases, the public services afford ample proof of its efficacy, and there seems to be no reason why the prevention of accidents should not be deemed worthy of being included within its legitimate bounds; nor why the combatant officers of both services should not be instructed in this science in their schools and colleges; for it is one which, from the earliest records of the military art, was deemed essential to the perfection of a great commander.

Concerning it, we read an interesting discussion of its merits and necessity in the first book of the *Institution of Cyrus*, as held between that mighty king, when a prince, and his uncle, to this effect. Cyrus speaks thus: "With respect to health, having heard and observed that cities wanting in health get physicians, and that generals, for the sake of their men, take physicians with them, so, when I was placed in command, I at once had regard to this point; and I believe that I have in my army men who are very skillful in that art." To this Cyaxares replied, "But these men are only like the patchers of worn garments, for it is only when men are sick that physicians are had recourse to; but your care of the health of your troops should be of a nobler nature—to prevent your army from becoming sickly, is what you, as a commander, ought to attend to." Then follow sanitary maxims, the

root of all army hygiene, imparted by the veteran to the younger soldier.

Thus we recognise that, from the earliest epochs of military history, hygiene has been regarded by the most enlightened conquerors as a study demanding their personal attention.

We may trace further back, by the aid of sacred history, the same principle of action in the Book of Leviticus, which contains precepts that have stood the test of three thousand years, embodying the experience of forty years of camp life, and there the execution was placed under the aegis of religion by an inspired leader and lawgiver.

In the modern history of civilised states, this important duty has become relegated from the limits of strategy and religion to those of medicine, with great advantage to mankind.

Whilst we accept the change as one adapted to the law of the fitness of social affairs, and may glory in this, that the practitioners of medicine, who were once looked at as like to the menders of ragged uniforms, have become the proper administrators of that which has been regarded as a very noble and divine office and function, we can yet safely admit that our own efficiency in it is proportioned to the enlightenment in the same path of those under whom we are called to serve, and therefore we may hail with satisfaction any course of instruction to them which would aid and support us in our endeavours to lessen still further the mortality amongst seamen and soldiers.

A CASE OF TRIPLETS, COMPLICATED WITH DOUBLE UTERUS.

By ALEXANDER G. DUNCAN, M.B., Crimond, N.B.

ON the 25th December, 1873, I was asked to see a woman, who, on my arrival, informed me that she was pregnant for the fifth time. She was about eight and a half months advanced in her pregnancy, and anticipated her confinement to take place in about a fortnight; but, as she was different in shape and size from what she had ever been previous to her other confinements, she wished to consult me.

She had, as I have already mentioned, borne four children previously to her present pregnancy, all of whom are strong and healthy.

Upon examination, she had a somewhat strange appearance. The abdomen seemed much larger than usual, and also to fall too far forward; and, at the same time, the width was greater than in most cases, with a well marked depression from above downwards, and a little to the left side. Upon further examination, I found that this depression was a distinct division between two tumours; the one upon the left side being the larger of the two, and reaching further up in the abdomen, also overlapping the tumour to the left side. At the same time, I could insert my hand between the two, separating them down to the pubes. I could also move the one tumour distinctly without in any way moving the other. Upon applying the stethoscope, I could detect foetal heart-sounds in both tumours. At this stage, I was firmly convinced that I had to do with a case of double uterus, each division containing a foetus.

My patient was a very intelligent person of her class, anxious about her condition, and wished distinctly to know what was wrong with her, for that there was something unusual she was firmly convinced. The case seemed so uncommon, that I declined to say anything concerning it until I had consulted with some of my neighbouring medical friends. Unfortunately, I never had any opportunity of doing so, owing to her labour coming on rather suddenly two days after my visit, and before I had an opportunity of consulting with any of my brethren.

I was called again on the 27th December, at 7 P.M., found the os fully dilated, the head presenting in the first position; and in a very short period she was delivered of a healthy female infant, which weighed a little over six pounds. The pains continued, and a breech presented, and in time we had another female child, this time weighing rather less than six pounds; in ten minutes, with a little assistance, the double placenta came away, and the newly emptied cavity contracted well.

There was now the well contracted womb in the lower part of the abdomen, to the right side; but there still remained the other tumour, which lay to the left, and rather behind the lately emptied cavity. It gradually assumed a middle position in the abdomen, and inclined to fall forward and overlap the contracted womb; however, I applied a binder in the usual way, and, with the exception of an occasional after-pain, she felt very comfortable.

After waiting about four hours, and there being no appearance of any action in the remaining tumour, I left, after giving the nurse instructions as to her duty if there should be any symptoms of labour in my absence.

In two hours after I left her, and six hours after the removal of the placenta, she again complained of pains, and I was again sent for. On my arrival, I found the head of the third child at the perinæum. This was also a female, but a much stronger child than any of its predecessors, weighing over seven pounds; the combined weight of all the three being over twenty pounds.

After the separation of the placenta, the tumours were now about equal in size, and quite distinct the one from the other, neither of the two occupying a middle position, but each taking its own side.

I examined my patient lately, and I found that the external os was single, the opening very much elongated from side to side; but, upon tilting it forward, the dividing septum was distinctly seen. I also introduced an uterine sound into each cavity. The septum could also be felt by the introduction of the finger.

This case may only be interesting in an anatomical point of view, as there was little skill or dexterity in manipulation required during the confinement; but, as such cases are rare, I concluded that the case would not be altogether void of interest to the members of the Association.

SYMPATHETIC OPHTHALMIA:

A HISTORICAL CORRECTION.

By J. VOSE SOLOMON, F.R.C.S., Birmingham.

MR. CARTER, in his recently published work on *Eye-Diseases*, in treating of the channel through which sympathetic irritation is conveyed, makes the following statement in reference to myself.

"Mr. Vose Solomon accuses the optic nerve, but only on the ground that, in a single instance, sympathetic ophthalmia followed enucleation of the eye in a patient of his own, whose optic nerve, on account of some imperfection in the scissors employed, was bruised at the place of division, instead of being cut."

My reply to these statements is, that not only such case has *never* occurred in my own practice, but, so far from its being considered by me that the optic nerve is the channel through which irritation is *primarily* conveyed, I contributed in February 1863 to the *Dublin Quarterly Journal*, page 58, a short article and illustrative case to prove that such hypothesis was untenable. (*Vide* also Braithwaite's *Retrospect*, vol. ii, 1864, p. 275.) The following is an epitome of the case with remarks: the latter are unabridged.

A man, aged 36, lost his left eye from a burn. In two months, sympathetic irritation affected the right. The left was excised, with great relief to the symptoms in the best eye. A bridge having formed between the lid and conjunctiva of the empty orbit, a glass mask was inserted, with the effect of reproducing the same train of symptoms as existed in the right before excision was performed. A retrocession of the sympathetic disturbance followed the removal of the mask, but, on its reinsertion, the symptoms returned with the addition of *photopsys*.

"English authors on ophthalmology have hitherto attributed the occurrence of sympathetic traumatic ophthalmia to the (existence of the) commissural arrangement of the optic nerve-fibres. The phenomena presented by the preceding case do not appear to afford a *locus standi* for such theory, inasmuch as the optic nerve on the side of irritation had been severed; but they may be satisfactorily explained, on the supposition that the irritation from the eyeless orbit was conveyed by the ophthalmic division of the fifth pair to the centre, and thence reflected to the opposite side. This view derives support from examples of reflex traumatic disorder, wherein the symptoms are those purely of hyperæsthesia of the fifth, and which yield almost *instantaneously* on removal of the original source of irritation; of this class of cases, some account is given in a paper of mine in the *BRITISH MEDICAL JOURNAL* for June 13th, 1857.

"Careful observation of a large number of instances of reflex ophthalmia has led me to the following, among other conclusions: that the *primary* traumatic irritation is conveyed to the sound eye through (sensory) branches of the fifth nerve; that soon afterwards, and sometimes simultaneously, the vaso-motor nerves (trophic) take on disordered action, and, as a consequence, intraocular congestions and their results occur; that if the disease be not arrested, the optic nerve-fibres become inflamed, or affected with such changes as induce atrophy, and which lead to similar degeneration of the opposite nerve. In this stage of the complaint, the commissural arrangement of the optic nerve-fibres is probably the channel through which the disorder is conveyed. Where there is an advanced amaurosis (of the eye affected sympathetically), the usual signs of atrophy of the optic nerve are revealed."

Since writing the above, my attention has been drawn to a valuable and carefully written article on this subject in the *British and Foreign Medical Review* for January 1868, in which my case and physiological views are adduced, as supporting the opinion that the vaso-motor nerves are the channel of communication; and if reference be made to the dates of publication of the author's works, which the reviewer has ably analysed, it will be found that my views, which were formed quite independently, possess priority of publication.

A NEW METHOD OF PERFORMING PLASTIC OPERATIONS.

By J. R. WOLFE, M.D., F.R.C.S.Ed.,
Surgeon to the Glasgow Ophthalmic Institution; Lecturer on Ophthalmic Surgery in Anderson's University.

IT is now nearly three hundred years since Tagliacozzi published his great work on *Plastic Operations*; and, notwithstanding the admiration which the work of the Bologna professor had elicited, it is remarkable how comparatively little has since been done for the cultivation of plastic surgery. The reasons are obvious. The fact is that, in operations on the nose, eyelids, and face—the most interesting regions for improving deformities—Tagliacozzi's method of taking flaps from the arm has been generally abandoned, on account of the extreme discomfort which it involves; and the practice of taking flaps from the forehead or face having been the only one in vogue, the procedure came to be considered more serious. In addition, when we take into account the elements of failure, from shrinking of the flap, from erysipelas or gangrene, it is not to be wondered at that surgeons are generally chary of resorting to the expedient, except in great emergencies. It amounts to this: we are to cut skin off the face to repair the face; and, in doing so, we run great risk of failure. To render plastic operations on the face more acceptable, and to bring them within a wider scope of utility, the following conditions must be fulfilled. 1. We must take a flap from the arm, or from any other part but the face. 2. We must seek to eliminate the elements of failure. I propose, in this short communication, to indicate the means of fulfilling both these conditions.

First, Tagliacozzi laid down the rule, which has ever since been considered as the primary law, and *sine quâ non* to the success of the operation, that the flap must retain its connection to the adjacent living structure by a pedicle which is to be severed only after complete union and cicatrization of the raw surfaces. This pedicle has, in my opinion, been a source of great embarrassment to surgeons, and tended rather to retard the progress of plastic surgery. From my observations on transplantation of structures from the lower animals and on skin-grafting, as well as on plastic operations, I have long held it demonstrated, that in most cases the pedicle is not essential, if indeed it do contribute anything, to the vitality of flap. This being once established, we are henceforward free to choose our bit of skin from any part of the body we may find suitable.

My next endeavour has been to eliminate the elements of failure. The principal cause of failure I find to be in the subcutaneous structures. If we wish a skin-flap to adhere to a new surface by first intention or agglutination, we must be sure that it is cleared of all areolar tissue, and properly fixed in its new place. The following case will illustrate the points referred to.

Formation of the Lower Eyelid with Skin from the Forearm.—P. C., aged 25, a quarrier, was admitted into the Glasgow Ophthalmic Institution, with his face, eyes, and eyelids injured by an explosion of powder. I showed the man recently to the Edinburgh meeting of the Association, as an instance of conjunctival transplantation from the rabbit.* The right upper eyelid, which was strongly everted, I partially succeeded in correcting by skin-grafting. The lower right eyelid being completely everted, its integument totally destroyed, and the skin of the face consisting of discoloured cicatrices not by any means suitable for plastic operations, I formed a new lower eyelid in the following manner. The edges of the upper and lower eyelids having been vivified, I introduced three ligatures into the border of the lower eyelid, which I entrusted to my assistant. By means of these ligatures, he used traction, whilst I dissected the whole of the cicatricial tissue, and thus liberated the subjacent structure. The ligatures were then introduced into the upper eyelid, and the edges of the upper and lower eyelids were thus united. I then elevated the edges of the wound, preparing them to receive the

* This patient had to undergo several operations before his eyes were rendered serviceable and his face presentable. Left eye: 1. Artificial pupil; 2. Conjunctival transplantation from rabbit. Right eye: 1. Paracentesis for onyx and hypopion; 2. Skin-grafting on upper eyelid; 3. Plastic operation on lower eyelid. All these operations were done without chloroform.