whole disease in one lump, and expresses his preference for the doctrine of stages. I cannot defend myself on this point from either critic without recapitulating almost the whole of my address—a task which the Society will, I am sure, gladly excuse me. Briefly, however, I may say that I consider the several so-called stages of syphilis as in part natural and in part conventional, and that I have not the slightest wish to make them more definite than is required by clinical convenience or suggested by pathological probability.

Amongst the chief contributions to facts, we must place Dr. Buzzard's valuable statistics as to the average age of those who suffer from disease of the nervous system, Dr. Hilton Fagge's statements as to the frequent alliance between syphilis and amyloid disease, and Dr. Greenfield's account of certain pathological details. Dr. Moxon has also mentioned some interesting examples of symmetrical tertiary growths; and Dr. Greenfield has recorded a *post mortem* examination in the secondary stage, in which gummata were found in the dura mater. I am sanguine that, hereafter, many of the topics which as yet have been only debated will be examined by the light of accumulations of new facts, otherwise some regret might perhaps be felt that, following my own bad example, most speakers have contented themselves by expressions of opinion.

The possibility of diagnosing syphilis by the odour of the patient was adverted to by Sir William Gull. The late Mr. Wormald used to teach that this was possible, and was fond of saying, "They can't deceive me; I nose 'em." It probably requires a very good sense of smell to make much use of this symptom. For myself, I may confess that I have rarely been able to distinguish anything peculiar in the odour of adults suffering from syphilis; but in infants I think it is often very perceptible and quite special.

In answer to the numerous surgeons who have requested further details as to my disbelief in dualism, I may briefly say that, although of course we must all fully recognise the differences between hard and soft sores, yet I do not think that the soft is a special form of disease. On the contrary, I believe that it is usually produced by contagion with the results of syphilitic inflammation; and that, if we could get rid of true syphilis, we should after a while cease to see examples of the soft sore also, with the exception of those which result from common inflammation, balanitis, and the like. My views on this point are explained in detail in a lecture published in the *Lancet* six months ago. To those who were inclined to complain that I had said that dualism was dead whilst it is still mentioned in several standard and excellent works, I can only reply that I was careful to say only dead, and that I did not say that it was buried. Had I done so, I should have been a little premature.

The observation made in the address as to the extreme unfrequency of affections of the brain and nerves in inherited syphilis has been confirmed by Dr. Buzzard and all speakers who have adverted to it. As none have mentioned facts in opposition, I think we may now regard it as generally admitted. I am not sure but that some statements which have been made may even help to explain it. Dr. Buzzard and Dr. Greenfield have both called attention to the probability that the tertiary growths take place in perivascular spaces and other adjuncts of the lymphatic system. Professor Sigmund of Vienna has also, during this discussion, in a paper published in the *Practitioner*, drawn attention to the circumstance that syphilis, from its beginning, shows an especial tendency to develop in lymphatic structures. Now, we must remember that this is true only of syphilis when acquired by a chancre. It is not the case when it is transmitted from parent to child, nor when a foetus infects the blood of its mother. In these, there is in the beginning no implication of glands. This may possibly be the reason why, in neither of these classes of cases do we find in the later stages of the disease that liability to perivascular growths and gummata which are not unfrequently witnessed as results of the chancre form of syphilis. It appears highly probable that we have to deal with syphilis in two or three (perhaps more) different moods, varying according to the precise manner in which the transference of the yeast-poison is effected, and the structures into which it is first introduced. In connection with these differing moods, different classes of sequelæ must be expected.

Dr. Wilks, Mr. Berkeley Hill, Dr. Buzzard, and others, have adverted to the interesting fact that serious tertiary symptoms are not unfrequently met with in those who have suffered but very little in the earlier stages. This is to be explained probably by several different considerations. In the first place, it is true only of a certain class. Some of the very worst examples of tertiary disease in which multiple manifestations occur, happen often to those who have suffered throughout very severely, who have perhaps scarcely ever got rid of their symptoms. Such at least has been my experience, and these are often patients with whom the specifics have disagreed, or who show in par-

ticular an idiosyncrasy as regards mercury. They are often very seriously out of health. There is, however, another class in which the tertiary symptoms attract much attention, and become very serious, not so much on account of their own extent or severity, but because located in an important position. A patient apparently in perfect health may have a single gumma on his brain, which may cause him most serious distress, whilst he has not about him another symptom of syphilis, either present or past. These are the cases to which I suspect allusion was made, and in these not unfrequently the patient knows but little about his early symptoms. I suspect that the real explanation of the frequency of such cases as these, and of the converse fact that those who have had well marked secondaries usually escape sequelæ, is that the latter are well treated by mercury, whilst the former neglect it.

I am painfully aware that in this reply I have done very scant justice to the numerous speakers who have taken part in the debate. I have, however, I hope, profited by all, and have endeavoured to incorporate in my statements to-night the hints they have given. That I have not even alluded to the splendid speech of Sir James Paget, is to be explained by the fact, that we agree on almost every point; and this, again, finds its solution in the further fact, that he was my teacher, not alone, as I was proud to be reminded, in general surgery, but also in the special doctrines of syphilis.

In conclusion, Mr. President, I have to express my sense of obligation for the many valuable suggestions which have been addressed to me both in public and in private, during the course of this prolonged debate. I should be ungrateful, indeed, if I did not very warmly appreciate also the kind and very flattering manner in which my introductory remarks have been received as well by my friends in this room as by my critics in the medical press. It is not for me to say whether the debate will add greatly to our knowledge of its subject; but I may confess with pleasure that I have myself learned much. If it have not been a harvest, we may, I think, hope, at any rate, that it has been seed-time, and that syphilis, long ago named by one of our great masters "the key to all pathology", may in the future be found yet more useful.

ON THE NUMERICAL RATIO OF DISEASE IN THE ADULT MALE COMMUNITY,

DEDUCED FROM THE SANITARY STATISTICS OF HER MAJESTY'S CUSTOMS, LONDON, FOR THE YEARS 1857-74.*

By WALTER DICKSON, M.D., R.N., Medical Inspector,
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AN acknowledged desideratum in the public medicine of this country is the registration of disease, and this Association has long urged the importance of making some attempt in this direction, and, through its recognised organs, has more than once brought the subject prominently before the administrative authorities. There can be no doubt of the great public utility of such a scheme, were it practicable to carry it out with even a moderate degree of efficiency and completeness.

The statistics of death, although confessedly far from perfect, yield a great amount of most valuable and trustworthy information with regard to the comparative mortality of age, sex, and place. They present a very fair index of the relative prevalence of those diseases which are normally fatal, as consumption, cancer, organic disease of the heart and other vital organs, and they also give some clue to the progress and epidemic intensity of zymotic diseases, the ratio of the mortality of which to the recoveries is, from the accumulated experience of many years, approximately known. The influence of extreme atmospheric conditions, more especially on the old and young, can also be estimated with tolerable accuracy from the Registrar-General's returns, those of last winter being a striking instance. Their great importance in the innumerable calculations, social, economical, and political, which are based on the probability of human life, and which furnish us with the knowledge to prevent its waste, is too obvious to require comment here. Our country has enjoyed a laudable pre-eminence in this department of statistical science from the time, two centuries ago, when Graunt and Petty utilised the London and Dublin bills of mortality, and the celebrated Dr. Halley submitted to the Royal Society a life-table calculated from the birth and death-rates of Breslau (*Philosophical Transactions*, 1674-93) until now, when the labours of the Registrars-General of the three kingdoms, always progressing and improving, have become the models for other countries to imitate. They place before us

* Read before the Section of Public Medicine at the Annual Meeting of the British Medical Association in Edinburgh, August 1875.

weekly most interesting results, in reliable mortality tables, not only of our own cities, but of the capitals of Europe and of the principal cities of India and America, which are thus compared and utilised for the benefit of mankind.

But there are many diseases of interest and importance not necessarily, and indeed seldom directly, fatal, concerning which there is little information to be gleaned from the Registrar-General's returns. Some of these, as, for example, rheumatism and its congeners, are among the most prevalent and painful disorders that afflict the adult male community in all ranks of life, and cripple to the most serious extent the bread-winning energies of that most valuable class of our population. Hence a better knowledge of such maladies in regard to their numerical ratio, their prevalence at various ages, in different occupations and localities, and the influence of season and climate on their causation, progress, and duration, would probably be of even greater practical value in a social and economical, as well as a medical, point of view than similar information in reference to other diseases which figure far more prominently in the bills of mortality for the United Kingdom.

The annual reports of the army and navy give an accurate account of the health of the forces serving on the home stations; but the results are, of course, somewhat modified by the foreign and tropical service which it is the lot of our troops and seamen at some time or other to undergo, and also by the comparative youthfulness of the individuals, most of whom leave these services before they have attained the prime of life. The same may be said of the police force throughout the kingdom, a fine body of men, older, in the average, than soldiers, but equally fluctuating in individual composition, seldom remaining for more than a few years in the force, and always, as in the military and naval services, discharged when suffering from any chronic illness.

The Poor-law and prison records might yield much information concerning too large a section, unfortunately, of the people suffering from disease engendered of poverty and privation and vice, and therein differently circumstanced from the well-doing majority of our industrious classes. It is probably not in barracks or ships, not in prisons or workhouses, but rather in the tables of the countless benefit societies organised by the workers of the community for mutual aid in sickness, that a true foundation for such sanitary statistics is to be looked for; and it would, doubtless, be greatly to the advantage of these societies to obtain trustworthy data for their guidance, inasmuch as at present, through miscalculation and mismanagement, the result oftener probably of ignorance than of dishonesty, a large proportion of these institutions are well known to be in a most unsatisfactory financial condition, causing bitter disappointment to their members, and sapping the cardinal virtues of thrift, prudence, and independence, so essential to the true well-being of an industrial community.*

In the hope of contributing, in however small a degree, to the elucidation of so important and interesting a subject, I now venture to place before the Association a condensed summary of the sanitary statistics of a body of men who, by reason of their age, social position, and occupation, present, I think, a very fair type of the average adult male population of the middle class of life, that section of the people whose normal condition it is to support respectably by their daily labour families of five or six persons, and who consequently form the back-bone of every industrious and civilised community.

Among the duties appertaining to the office which I have the honour to hold is the medical charge of the subaltern Custom House officers of the port of London, averaging of late years about a thousand in number, of ages ranging from 25 to 65 years, and daily occupied from eight to twelve hours a day in duties of varied character, but in many instances involving considerable labour and exposure to the weather. One-fourth of this force are nominally resident at Gravesend, being stationed there for the boarding duties of the port; and they spend most of their time day and night on board-ship; every vessel from abroad, as it passes up the Thames, being visited and officers stationed on board each ship for a greater or less number of days for the protection of the revenue. The remainder, averaging recently 750 in number, are resident in London, and with the exception of those who are employed in turn on night-duty, sleep at home. Their houses are for the most part situated in the eastern and southern suburbs of London, at a distance of two or three miles from the scene of their vocations. They are arranged in three sections: out-door officers, watermen, and messengers; and, as the names imply, their duties are considerably diversified. Probably the most arduous work is that of the watermen, who are employed in examining all ships on arrival, more especially their holds and engine-rooms, which are of a very high temperature,

many degrees above that of the air on deck; and these officers are, therefore, much exposed to extreme vicissitudes in their "rummaging" duties, as well as having much muscular exertion in rowing about the river. The out-door officers are chiefly in charge of imports and exports, and are employed in the various water-side and water-guard duties of lockers, weighers, and tide-waiters in vaults and warehouses where goods subject to revenue are stored, or on the wharves and docks where they are landed. As fires are prohibited in such places, the exposure to cold in winter is considerable. These circumstances are mentioned thus incidentally to show that this body of men, with few exceptions, have as laborious duties to perform, and are as much subjected to the influence of climate, as any body of workers in the community.

They enjoy the advantages, common to all civil servants of the State, of permanent employment, fair remuneration, and the prospect of a pension when incapacitated by age or infirmity. They are all submitted to medical examination before entering the service, and are, therefore, presumably free from constitutional disease or patent defect, and in possession of fair physical strength. In consequence of successive changes in the tariff, their number until lately gradually decreased, no appointments having been made for some years to supply the vacancies which have occurred from death, superannuation, promotion, etc.; and the average age of the Customs officers is, therefore, considerably higher than it was a few years ago, and may be computed at present to be about 38 years: an important fact to be taken into account in relation to their sanitary condition. For upwards of half a century, records exist of the sickness and mortality of the force; and these documents since 1854, when all the subaltern officers of Customs were placed under the immediate care and surveillance of the medical inspector, have been kept with increased minuteness and accuracy, so as to present a continuous and complete series of sanitary data, embodied in the weekly, quarterly, and annual tables and reports of the department.

During the twenty-eight years over which these reports extend, the mean annual number of the force in medical charge has varied from 1337, the maximum, to 923, the minimum. The mean strength of the whole period has been 1130. The mean age of the force has increased proportionally in the period from an annual average of 33 to 38 years, but may be assumed with tolerable accuracy to have been during the period 35 years. We have, therefore, in the aggregate a body of 32,000 men in the prime of life as the basis of our calculations; and I will now submit to you the general results deduced from the experience of these twenty-eight years.

The mean daily number incapacitated for duty by reason of sickness or accident has been 29 per 1,000. The highest annual number was 37 per 1,000, the lowest 20 per 1,000.

The ratio of cases admitted to the sick list on the mean strength of the force has been 700 per 1,000; the annual mean ratio having varied from 820, the maximum, to 590 per 1,000, the minimum.

The mean duration of each case under treatment has varied from thirteen to twenty-one days, the mean of the whole period having been 15.5 days. As this period includes two Sundays, 13½ days would be the proportion in comparison with those who have no Sunday labour.

The time lost by each individual of the force has varied annually from fourteen days, the maximum, to ten days, the minimum. The mean time in the whole period lost by each person in consequence of disease and accident has been eleven days, or, deducting Sunday, 9.5 days per man in each year.

These figures demonstrate a very satisfactory state of health of the department, when the age, duties, and peculiar circumstances of the Customs officers are taken into consideration, and, as the table annexed shows, will compare favourably with the considerably younger men of the army and navy serving in the United Kingdom.

For many years, the London officers have been provided with medical attendance and medicines at the expense of the Crown; but, until eleven years ago, a stoppage was made on their pay during time of sickness, at first amounting to about one-half, and subsequently to about a fifth of their whole salary. In 1864, a very great boon was conferred on them by their being permitted, when sick, to retain the whole of their emoluments during the first six months of absence, and after that time to be placed on half-salary till removed from the sick list by death or superannuation. This privilege, although sometimes liable to be abused by the indolent and unscrupulous, and necessitating unremitting vigilance on the part of the medical officers, has unquestionably been highly beneficial in enabling officers, who could otherwise ill afford a pecuniary sacrifice, to avail themselves of timely remedial measures, and to procure rest at home, and such other comforts as their condition might require, to the great alleviation of

* These societies are stated, on high authority, to number four millions of members, and to possess property to the amount of eleven millions sterling. Their prosperity has, therefore, become a matter of vital national interest.

disease and better prospect of recovery. The result is, that the sick list has been heavier by about 25 per cent., but that acute disease is comparatively rare and seldom fatal, and the downward progress of incurable maladies has been much retarded. The immense majority of the cases (970 per 1,000) terminate in recovery and return to duty. Those who, after some months' treatment, are found to be still incapacitated are superannuated.

The mortality from disease has ranged from five to eighteen *per annum*, and shows for the twenty-eight years an annual mean death-rate of 11.5 per 1,000. Deaths from accident have averaged annually 1.3 1,000. Deaths from all causes have in the period amounted to 12.7 per 1,000.

Retirements from the service by reason of physical or mental incapacity have ranged from 2 to 20 *per annum*, yielding in the twenty-eight years a mean rate of 8 per 1,000 annually superannuated. Combined with deaths, this will give a ratio of 21 per 1,000 for departure from the service through disease and accident: a very moderate proportion when compared with the military and naval services, where, by the mean of ten years' returns of the forces on the home stations, the combined rate was in the Army 43 per 1,000, and in the Royal Navy 37 per 1,000.

TABLE I.—Comparative View of the Annual Numerical Ratio of Disease and Injury in the Army, Navy, and Customs Force.

	Mean daily No. per 1000.	Admissions to Sick List per 1000.	Mean Duration of each Case (Days).	Time lost per Man (Days).	Deaths per 1000.	Invaliding per 1000.	Death and Invaliding per 1000.
Army in the United Kingdom (average of 10 years).....	48	941	18	17	9.5	34	43.5
Navy on the Home Station (average of 10 years).....	41	944	17	15	9.1	28	37.1
Customs Force, Port of London (average of 28 years, 1847-74.)	29	700	15.5	11	12.7	8	20.7

In all these services, it is impossible to dissociate mortality and invaliding, seeing that many of the cases invalided for phthisis, etc., terminate in no long time in death; and, in the military service, such cases are discharged at a comparatively early period. In the Customs force it is different, persons afflicted with chronic diseases often being able to continue at some light duty for many months, with occasional absences in severe weather, and so to defer death or superannuation for a considerable time, in like manner to the bulk of the civil population similarly circumstanced. The ratio of mortality has been tolerably uniform, but that of superannuation has been greatly diminished of late years, more especially for the necessarily fatal diseases. The great majority of those superannuated for rheumatism, insanity, etc., survive for many years afterwards. The combined mortality and superannuation rate for the years preceding 1862 was 24 per 1,000; since that date, it has fallen to 17 per 1,000. Superannuations over the age of 60 for senile debility, etc., do not require medical certificate, and are dealt with in the ordinary way, the officers retiring on a pension proportioned, as in other cases, to their length of service.

[To be continued.]

LARGE VENO-CUTANEOUS NÆVUS TREATED SUCCESSFULLY BY REPEATED INJECTIONS WITH CARBOLIC ACID.

By S. MESSENGER BRADLEY, F.R.C.S.,
Surgeon to the Manchester Royal Infirmary.

A FEMALE infant, about eight months old, was brought to the out-patient rooms of the Manchester Infirmary last November, with a large and prominent nœvus situated above and extending into the helix of the left ear. The tumour, which involved the cutaneous capillaries as well as the veins beneath, measured two inches and a half by one inch and a half, and was raised half an inch above the level of the surrounding skin. I resolved to treat the case as Lister advises, by the injection of carbolic acid; but first, to prevent any risk of embolism, I transfixed the base of the tumour with two long hair-lip pins at right angles to each other, and strangled the entire mass with a ligature tied tightly beneath the pins. I then injected five minims of pure carbolic acid, dispensing it as evenly as possible in minims doses, here and there over the whole tumour. The ligature was cut, and the

needles removed in ten minutes. Little if any change was apparent three days later, when I repeated the process. After a further lapse of four days, no improvement being perceptible, I ligatured the nœvus by means of a Fergusson's knot, and admitted the child into the hospital; its cries, however, were so piteous and continuous, that the house surgeon was compelled to remove the ligature in about six hours, and I do not think that its introduction contributed in any material degree to the successful issue of the case. The following week I again resorted to the injection, and repeated it at intervals of four and five days; but it was not until three weeks had elapsed, and the injections had been employed half-a-dozen times, that any diminution was perceptible. At this period, however, a decrease became manifest, and this decrease steadily progressed, *although no further injection was used*. From week to week until now (March 14th) the tumour is no longer at all raised above the level of the surrounding skin, and the integument has almost entirely regained its natural character and colour.

The point of chief interest here appears to be the gradual but very continuous action of the acid. Probably success would have been equally attained by fewer injections; and, in the next case of the kind, I should allow an interval of a week or ten days between the operations. But the really important fact seems to be, that we can confidently count on success by this safe and little unpleasant method; and when we reflect upon this fact, and at the same time call to mind the potency of electrolysis in the treatment of aneurism, where the long-continued result following the operation closely resembles the action of injections in nœvus, we are led to conclude that the entire chapter of the treatment of vascular tumour will have to be rewritten.

The remarkable way in which the stained skin recovered its normal colour in this case induced me to ponder upon the possibility of removing simple capillary nœvi, or "mother's marks", which sometimes cover large portions of the body; and, at last it occurred to me, that the desired end might be achieved by "tattooing" such marks with carbolic acid. On this idea I acted, and tattooed the first case that presented itself; the result answered my utmost expectations, for, in about three weeks, the port-wine stains quite disappeared, its place being taken by a tincture of natural colour. It is true that the nœvus in this case did not exceed half-a-crown in diameter, and, up to the present time, I have had no opportunity of testing the efficacy of this plan upon large surfaces; but this I shall certainly do the first chance that offers, and will, if permitted, communicate the result to the BRITISH MEDICAL JOURNAL.

I may add, that I used an ordinary subcutaneous syringe for the tattooing, first removing the piston and withdrawing my finger from the top each time I punctured the skin, so as to permit a small drop of the acid to escape.

I am, however, having a little instrument especially made which I think will be more convenient; it consists of a hollow tube of the size of a quill-pen, with a perforated top, and terminating in a somewhat similar fashion to the teeth of certain poisonous snakes, a small groove, down which the fluid runs, opening immediately above the lancet-shaped point of the instrument.

CASES ILLUSTRATING THE SIGNIFICANCE OF VAGINAL EXAMINATION IN OBSTETRIC PRACTICE.

By A. E. AUST LAWRENCE, M.D.,
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THE following paper is an abstract of one read before the Bristol Medical and Chirurgical Society on October 27th, 1875; and it is intended to show that there are a large number of cases, the true nature of which would be overlooked unless a vaginal examination were instituted.

In the first set of cases detailed, the symptoms pointed to some urinary trouble, either (1) difficulty in passing urine, (2) constant desires to pass urine, or (3) scalding.

The difficulty in passing urine was found to be due in three cases to retroflexion, and in two cases to antelexion, of the uterus; and, upon replacing that organ and maintaining it in its proper position, the trouble entirely ceased.

The symptom of constant desires to pass urine was found associated with ulceration of os and cervix uteri in six cases, with hemorrhoids in two cases, and with polypi attached just inside the os uteri in three cases. The symptom entirely disappeared on the removal of the causes specified above.

The symptom of scalding on passing urine was found to be due in