the brain and spinal chord has been disturbed. Cases of this kind present physiological and pathological phenomena of great interest.

INSTRUMENT FOR PARACENTESIS THORACIS. BY HENRY CLARK, ESQ.
The PRESIDENT exhibited an instrument which he had made for drawing fluid from the pleura by an exhausted receiver, and so preventing the entrance of air.

[A description and drawing will be published in the JOURNAL.]

Dr. HERAPATH had recently a patient with paracentesis abdominis, in a state of extreme exhaustion. He had removed the fluid by passing the tube of a stomach pump into the pelvic portion of the peritoneal cavity, while the patient was recumbent, and had thus drawn off all the water. The patient recovered. In another case, where similar means were used, the amount of fluid was not so great, but the disease was complicated with ovarian tumour. The fluid was removed successfully, and the patient then went into the infirmary. The ovarian tumour opened itself through the rectum, and thus the woman was cured.

Mr. HENSLEY and Mr. NORMAN detailed cases where an instrument like that exhibited would have been most useful.

Thanks having been voted to the authors of the communications and to the Chairman, the meeting broke up.

ORIGINAL COMMUNICATIONS.

FACTS AND OPINIONS RELATING TO TUBERCULOSIS, WITH COMMENTARIES.

By HENRY ANCELL, Surgeon.

NO. II.

MANY of the readers of the ASSOCIATION JOURNAL may not have the opportunity of referring to the original *Statistical Reports of the Sickness, Mortality, and Invaliding, among the Troops*; and it may be well to point out a few particulars illustrating the degree of accuracy attributable to them. The first and most important point is, that, by a standing order of the army authorities, a *post mortem* examination is required to be made in every case; and this rule is deviated from in the fewest instances possible. The sources of error are the usual ones of mistaken diagnosis and nosological imperfections. As soon as a man becomes seriously ill with chronic disease, he is invalided; and among those cases reported under "chronic catarrh", "hepatitis", and other designations, some may ultimately prove to be cases of phthisis. Again, among those invalided and discharged from the service, merging into the civil population, returns are not obtained of the ultimate results, or the causes of death. The consequence of these circumstances, *pro and con*, is, that the numbers representing the frequency of death from phthisis are always to be regarded as the *minima* of the actual occurrence of the disease. As respects the numbers representing the admissions, it must also be borne in mind, that the same cases, having been discharged cured or relieved, may be readmitted, when they are regarded as new cases; and the proportion of deaths to the admissions must not be taken absolutely, inasmuch as the difference between them is, to a great extent, made up of these readmissions. With the latter qualification, phthisis is a much more fatal disease than it would otherwise appear to be. Since these circumstances appertain to the whole series of the army statistics, they do not invalidate the comparison of one part with another; and, provided we bear in mind the sources of fallacy, and avoid adopting the numbers as positive mathematical data, they afford a most useful means of comparison with other statistical results. In such of the tables as I have worked out myself, I have, in most instances, omitted decimal fractions, since it is only where very decided differences exist that we can arrive at conclusions from such data.

The medical statistics of the British troops serving in the three Mediterranean commands, Gibraltar, Malta, and the Ionian Islands, during the sixteen years included in the report now under review, as compared with the statistics of

the previous twenty years contained in the former reports, indicate but little amelioration in pulmonary diseases in the aggregate, and none as respects tuberculosis; for, although, as seen in the following tables, the proportion of deaths to the amount of the force employed is, in some instances, diminished, the authors very justly attribute this circumstance, in the main, to the increased facilities for sending invalids home, since the establishment of regular steam communication with England, and the unavoidable omission of the results, where the individuals have been discharged the service.

The aggregate strength in the above commands, during the ten years, was 80,504 British troops, and 3,453 Malta fencibles, or natives of the island enlisted for ten years; in all, 83,957. For the reasons stated in the last paper, hydrocephalus is a rare occurrence, one case only being recorded; and tabes mesenterica is not mentioned. The number of cases of *scrofula* admitted into hospital among the British troops was 247, and among the Maltese troops 2; the proportions of admissions and deaths to the aggregate strength were as follows:—

	Strength.	Admission.	Deaths.
Gibraltar.....	33131	1 in 315	1 in 16505
Malta	21172	1 in 282	None.
Malta Fencibles..	3453	1 in 1726	None.
Ionian Islands ...	26201	1 in 391	1 in 26201

The number of cases admitted into hospital for *scrofula*, among the troops serving in the Mediterranean, was thus a small fraction over 3 per 1,000; while, among those serving at home, as shown in my first paper, it was 4 per 1,000.

Our next point is the aggregate amount of pulmonary disease, represented in

TABLE V.

The proportionate number of pulmonary diseases to the amount of the force, in the troops serving in the Mediterranean commands.

	Aggregate strength, 10 years.	Annual ratio per 1000.	
		Admitted.	Died.
Gibraltar.....	33131	132.	5.82
Malta	21172	140.	7.93
Malta Fencibles (Natives)	5547	23.8	3.8
Ionian Islands	26201	134.	6.22
Corfu and Vido	16963	145.	6.1
Paxo	413	75.	2.4
Santa Maura	1254	89.	.8
Cephalonia	3599	114.	5.3
Zante	2804	127.	4.6
Ithaca	571	117.	3.5
Cerigo	510	145.	3.9

This table comprises not only the deaths in the military hospitals abroad, but also the deaths, whether during the voyage or at Chatham, of troops invalided and sent home; but it does not represent the whole mortality, since the deaths after discharge from the service, as before stated, are not included.

In Gibraltar, from the year 1818 to 1836, the admissions and deaths per 1,000 mean strength, were respectively 142 and 5.5; the latter number not including the deaths among those invalided and sent home. In Malta, from 1817 to 1836, also omitting the deaths among invalids, the ratios were, respectively, 120 and 6 per 1,000. This shows for Gibraltar a rather considerable diminution both of admissions and deaths, compared with the numbers for the last ten years; for Malta, a considerable increase of admissions, the excess arising from the greater number of cases of acute catarrh, which prevailed in 1837, 1840, and 1841; and a slight diminution of deaths, as seen more clearly in the next table.

We have now to look to the relative proportions of each specified disease of the lungs contributing to the sum total of pulmonary sickness and mortality.

TABLE VI.

Specification of pulmonary diseases among the troops in the Mediterranean, with the number of admissions into hospital, and deaths, during ten years, from 1837 to 1846.

	Gibraltar, 33,131.			Malta, 21,172.			Malta Fencibles, 3,453.			Ionian Islands, 26,301.		
	Admitted.	Died.	Deaths to Admissions.	Admitted.	Died.	Deaths to Admissions.	Admitted.	Died.	Deaths to Admissions.	Admitted.	Died.	Deaths to Admissions.
Pneumonia	333	20	1 in 16½	287	6	1 in 48	1	—	—	232	16	1 in 15
Pleuritis	158	2	1 in 79	22	—	0 in 22	1	—	—	33	1	1 in 33
Hæmoptysis	78	1	1 in 78	79	1	1 in 79	5	3	3 in 5	57	2	1 in 28½
Phthisis	176	110	2 in 3	129	91	2 in 3	7	6	6 in 7	145	89	1 in 1½
Acute catarrh	3027	3	1 in 1009	2009	11	1 in 183	52	1	1 in 52	2392	8	1 in 299
Chronic catarrh	525	8	1 in 66	393	16	1 in 25	10	2	1 in 5	588	18	1 in 32
Asthma	44	1	1 in 44	9	1	1 in 9	5	—	—	11	1	1 in 11
Difficulty of breathing..	31	—	None.	40	—	—	1	1	1 in 1	49	5	1 in 9
Pertussis	1	—	None.	—	—	—	—	—	—	—	—	—
Total	4373	151	1 in 29	2968	126	1 in 24	82	13	1 in 6.3	3507	140	1 in 25
Annual ratio per 1000, mean strength	132	4.56		140	5.95		23.7	3.7		134	5.3	
Ditto, including deaths of invalids		5.82			7.93							

An important remark is made by the authors of the report, that the diminished mortality at Gibraltar during the last ten years is due, altogether, to a diminished number of deaths from inflammatory affections, and not at all to a smaller amount of tuberculosis pulmonalis; in illustration of which, they furnish the following ratios:—

	Deaths per 1000 mean strength.	
	1818 to 1836.	1837 to 1846.
Inflammation of the lungs	.93	.60
Catarrh	.65	.33
Consumption and hæmoptysis	3.70	3.62

At Malta, also, the mortality from inflammatory diseases, during the last ten years, was only about two-thirds that of the previous twenty years; whereas, from consumption, it is represented by numbers almost identical. The mortality from pulmonary diseases in the aggregate was greater among the troops serving at Malta than among those serving in the Ionian Islands, in the proportion of about 8 to 6, although the climate of the former is much milder, and cold winds and sudden alternations of temperature are comparatively rare.

At Gibraltar, a special cause of improvement of the health of the force existed. In addition to the ordinary duties of a peace establishment, working parties were furnished, in considerable numbers, to assist in improving the fortifications; and the comparative immunity from disease enjoyed by these parties was often a subject of observation.

Comparing the amount of pulmonary disease, as measured by the admissions into hospital, among the troops serving in the United Kingdom, with the amount among those serving in the Mediterranean (Tables III, IV, V), it is found to be considerably greater in the former than in the latter. Comparing the number of deaths, the ratio per 1,000 is considerably less for Gibraltar, but greater for Malta, than among the dragon guards and dragoons serving at home; it is less in Malta than among the infantry at home, by about 2 per 1,000.

This brings us to the more particular consideration of the amount of tuberculosis pulmonalis among the troops in the Mediterranean. The cases of phthisis in the different commands were as follows:—

	Admissions.	Deaths.
Gibraltar	1 in 188	1 in 285
Malta	1 in 164	1 in 232
Malta Fencibles	1 in 493	1 in 575
Ionian Islands	1 in 180	1 in 294

On reducing this to a mean of the three commands, the proportion of deaths from phthisis, in the British troops serving in the Mediterranean, is 1 in 271, being below the mortality among the male population at home at the period

for military service, and less than half the mortality among the military at home; but, unfortunately, for the reasons before assigned, the above numbers represent the minimum of deaths, and by no means the whole mortality from this disease.

In the Malta Fencibles, or native troops, with an aggregate strength of 3,453, during six years, the annual ratio per 1,000 admitted into hospital for diseases of the lungs was 23.8, and the annual deaths 3.8. Of a total of twenty-eight deaths, thirteen, or nearly one-half, were from pulmonary disease. Of twelve admissions for hæmoptysis and consumption, nine died, and there is no certainty of the others having recovered; so that, although they were considerably less liable to phthisis than the British troops, when attacked, the disease proved equally, if not more certainly, fatal.

Having thus shown the frequency and fatality of pulmonary affections, and particularly of phthisis pulmonalis, among soldiers in these various commands, the report refers to the liability of sailors to the same class of diseases while serving at the home and the Mediterranean stations. The data for the following table are extracted from the Navy Reports:—

TABLE VII.

Comparison of the sickness and mortality from pulmonary diseases in the naval and military forces in the Mediterranean.

	In the naval force: out of an aggregate of 100,461.		In the military force: out of an aggregate of 102,314.	
	Attacked.	Died.	Attacked.	Died.
Pneumonia and pleurisy	2598	86	2281	92
Hæmoptysis	234	12	269	8
Phthisis	437	180	629	419
Catarrh	21971	27	11314	83
Asthma and dyspnoea ..	161	7	213	6
Total	25401	312	14706	608
Ratio per 1000 mean strength	253	3.1	144	5.9

The attacks of pulmonary diseases, viewed as a class, are thus nearly twice as numerous in the navy as in the army. The proportions, however, both of attacks and deaths, as regards inflammation of the lungs, pleurisy, and hæmoptysis, are almost identical in the two services; the difference being determined chiefly by catarrh and consumption; but, in reference to these two diseases, a very remarkable discrepancy appears. While the cases of catarrh are twice as numerous

in the navy as in the army, those of consumption are less, in the proportion of four and three-tenths to six and one-tenth. This fact, as well as the low number representing the deaths from these diseases in the navy, is considered to be, in part only, attributable to the facility for sending home all cases which begin to assume a serious character.

The following table is also given in the Report :—

TABLE VIII.

The proportionate numbers of the naval force attacked by consumption and hæmoptysis, on the Home and Mediterranean stations, during seven years, from 1830 to 1836 inclusive.

	Aggregate strength, 7 years.	Cases of consumption and hæmoptysis.	Ratio per 1000, mean strength.
Home Force	21493	174	8.10
Various Forces*	16250	129	7.94
Mediterranean Command	55709	432	7.75

These tables furnish conclusive evidence of two things; that neither the climates nor the seafaring life exert any decided influence in preventing or retarding the development of consumption; for although, in the navy, only two-fifths of those reported as consumption appear to have terminated fatally (Table VII), the remainder must not be considered as having recovered. Many, no doubt, died after their return home and discharge from the service. At the same time, the reporters remark, that either the air or the excitement produced by the voyage appears sometimes to mitigate the symptoms, as in the case of soldiers sent home from Malta, apparently labouring under confirmed phthisis; who have sometimes arrived home with renovated health, and speedily returned to their duty.

Having given the statistical facts relating to tuberculosis among the troops serving at home and in the Mediterranean, I now proceed, in the same order, with the returns from British America. This includes four military com-

mands, viz., the Bermudas; Nova Scotia, New Brunswick, etc.; Canada; and Newfoundland. The latitude and climate of the Bermudas differ so greatly from those of other stations, that it will be necessary in most instances to treat of them separately. The aggregate strength in these islands, during the ten years, was 11,224, and in the remaining commands 120,989. As in Great Britain and in the Mediterranean, hydrocephalus and tabes mesenterica are extremely rare occurrences; they are not mentioned in the report from the Bermudas; and there were but two cases of the former, with two deaths, in the remaining commands. Of *scrofula*, there were 48 cases in the Bermudas, and an aggregate of 169 in North America, which numbers furnish the following proportions:—

	Strength.	Admissions.	Deaths.
The Bermudas	11,224 ..	1 in 238 ..	None.
Nova Scotia, New Brunswick, etc.	26,806 ..	1 in 348 ..	None.
Canada	90,156 ..	1 in 1,016 ..	1 in 30,152.
Newfoundland	3,727 ..	1 in 1,242 ..	None.

We now turn to pulmonary affections.

TABLE IX.

The proportionate number of pulmonary diseases to the amount of the force, in the troops serving in the various commands in British America.

	Aggregate strength, 10 years.	Diseases of the lungs. Annual ratio per 1000.	
		Admitted into hospital.	Deaths, including invalids.
The Bermudas	11224	134	9.4
Nova Scotia, New Brunswick, etc.	26806	180	7.7
Canada	90456	157	7.44
Newfoundland	3727	199	4.3

The particular diseases which furnish these proportions are as follows:—

TABLE X.

Specification of Pulmonary Diseases among the Troops in British America, with the number of admissions into Hospital, and deaths, during ten years, from 1837 to 1846.

	The Bermudas.			Nova Scotia and N. Brunswick.			Canada.			Newfoundland.		
	Admitted.	Died.	Deaths to Admissions.	Admitted.	Died.	Deaths to Admissions.	Admitted.	Died.	Deaths to Admissions.	Admitted.	Died.	Deaths to Admissions.
Pneumonia	23	4	1 in 6	335	30	1 in 11	1589	124	1 in 13	25	1	1 in 25
Pleurisy	56	3	1 in 19	47	—	0 in 47	196	7	1 in 28	2	—	0 in 2
Hæmoptysis	44	4	1 in 11	60	2	1 in 30	236	18	1 in 13	20	—	0 in 20
Phthisis	100	54	1 in 2	149	111	3 in 4	524	327	1 in 1.6	15	13	13 in 15
Acute catarrh	1090	14	1 in 73	3647	13	1 in 280	10033	46	1 in 218	629	—	0 in 629
Chronic catarrh	146	13	1 in 11	538	33	1 in 16	1507	65	1 in 23	22	2	1 in 11
Asthma	12	1	1 in 12	21	—	0 in 21	20	—	0 in 20	9	—	0 in 9
Difficulty of breathing..	35	—	0 in 35	39	1	1 in 39	114	7	1 in 16	21	—	0 in 21
Pertussis	—	—	—	—	—	—	2	—	0 in 2	—	—	—
Total	1506	93	1 in 16	4836	190	1 in 24	14221	594	1 in 24	743	16	1 in 46
Annual ratio per 1000, strength	134	8.3		180	7.1		157	6.57		199	4.3	
Ditto, including deaths of invalids		9.4			7.7			7.44				

The proportion of consumption to the aggregate force, deduced from the last table, is as follows:—

	Admissions.	Deaths.
Bermudas	1 in 112 ..	1 in 207
Nova Scotia, New Brunswick, etc.	1 in 170 ..	1 in 241
Canada	1 in 172 ..	1 in 276
Newfoundland	1 in 248 ..	1 in 286

* The term "various" applies to ships, though reckoned on home service, employed occasionally abroad in various detached duties.

Thus, in Canada and Newfoundland, during these ten years, the proportionate number of deaths from phthisis was below that of the male population of England at the period of life for military service. In Nova Scotia, New Brunswick, etc., the proportion, during the year 1847, adopted in these papers for the purpose of comparison, was a very little above that of the male population at home from 15 to 50 years of age, and considerably less than that of the male population from 20 to 40 years of age. In Bermudas, the proportion was much greater than among the

civil population, and the dragoon guards and dragoons at home, and not much below the infantry of the line and the foot guards.

In the study of these statistics, then, the first, and one of the most important questions which presents itself, relates to the influence of migration to these widely different climates over the production or development of tuberculosis. We find that, contrary to the popular, and I may say, the professional view, migration to a warm climate afforded very little amelioration in any case except one, but in some cases an aggravation; and migration to a cold climate, instead of increasing, actually diminished the amount of this fatal disease. The cases admitted, and the deaths from consumption, were considerably less in number in the rigid northerly climates of Canada, Nova Scotia, and Newfoundland, than in Bermuda and Malta. This is shown again most unequivocally in the following:—

TABLE XI.

Comparison of deaths from consumption and hæmoptysis in Malta and Canada.

1837—46.	Aggregate strength.	Admitted for consumption and hæmoptysis.	Died of these diseases.	Ratio per 1000 mean strength.	
				Admitted.	Died.
Malta.....	21172	208	92	9.8	4.3
Canada	90456	760	345	8.4	3.8

The statistics of the invalids discharged the service, on account of pulmonary disease, are, upon the whole, confirmatory of the same facts, as shown by the following proportion per 1,000 mean strength:—

Gibraltar	5.1	Canada	5.2
Malta	4.6	Nova Scotia, etc.,...	4.6
Ionian Islands	4.3	Bermudas	5.

Thus, the number invalided for pulmonary diseases, in the aggregate, is almost the same in Gibraltar, where the temperature ranges from 45° to 86°, as in Canada, where it ranges from 23° below to 87° above zero; and, whether we take as our criterion the number admitted into hospital,

the number of deaths, or the number invalided, there is less consumption in the British army in the northern climates than at home, in the Mediterranean, or in the Bermudas.

It is indeed one of the most remarkable circumstances, that, throughout the thirty years over which these and the statistics formerly published extend, the mortality from diseases of the lungs, and especially from tuberculosis pulmonalis, in the mild and comparatively equable climate of Bermuda, is much higher than in the North American colonies, with their extremes of heat and cold, and their long continued winters. That this circumstance is not accidental, we have a proof in the length of the period, and the uniformity of the results; and, also, in the fact that, by the statistics of the United States army, in East Florida, which is in nearly the same latitude as Bermuda, with a corresponding temperature, the admissions into hospital for consumption are much more numerous than in the northern regions. In Florida, they amount to eight and seven-tenths per 1,000 mean strength annually; while in the countries beyond the 40th degree of north latitude, including all those where the winter is most severe, the proportion admitted for the same disease is only seven per 1,000. Newfoundland has a climate more liable to sudden vicissitudes than any part of the American continent to which British troops are sent, and is subject to frequent and dense fogs throughout the year; and, as remarked by the authors of the Report, the small number of deaths from consumption affords another striking instance how little this disease appears to be influenced by those atmospheric causes which were at one time supposed to be most active in its production. The proportion of the whole force attacked annually was about four per 1,000; in the Mediterranean, out of an equal number, the proportion would have been five and six-tenths; among the infantry in the United Kingdom, ten and three-tenths; and in the mild and comparatively equable climate of Bermuda, nine per 1,000 mean strength.

For the purpose of affording every facility for comparison to those who interest themselves in these matters, I have drawn up the following more complete table, in three parts, of the proportionate numbers of the admissions, and the deaths from each disease of the lungs, to the number of the troops in every command:—

TABLE XII.—A. UNITED KINGDOM.

	Dragoon Guards and Dgus.		Foot Guards.		Infantry of the Line.		Household Cavalry.	
	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
Pneumonia	1 in 161	1 in 2265	1 in 74	1 in 955	1 in 84	1 in 1032	Not returned.	
Pleuritis	1 in 3398	1 in 27187	1 in 1294	1 in 20060	1 in 511	1 in 16010		
Hæmoptysis	1 in 407	1 in 3020	1 in 129	1 in 2300	1 in 419	1 in 4446		
Phthisis	1 in 140	1 in 177	1 in 61	1 in 83	1 in 96	1 in 129		1 in 158
Catarrhus Acutus	1 in 8	1 in 4531	1 in 8	1 in 5731	1 in 8	1 in 2910		1 in 6041
Catarrhus Chronicus	1 in 57	1 in 1874	1 in 133	1 in 5731	1 in 47	1 in 1185		
Asthma Periodica	1 in 1182	1 in 10874			1 in 1861	1 in 80051		
Asthma Convulsiva								
Dyspnœa Continua	1 in 906	1 in 18124	1 in 2674	None.	1 in 667	1 in 22871		1 in 12083
Angina Pectoris			1 in 40120	1 in 21172				

B. MEDITERRANEAN.

	Gibraltar.		Malta.		Malta Fencibles.		Ionian Islands.	
	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
Pneumonia	1 in 99	1 in 1650	1 in 73	1 in 3528	1 in 3453	None.	1 in 112	1 in 1637
Pleuritis	1 in 209	1 in 16505	1 in 962	None.	1 in 3453	None.	1 in 793	1 in 26201
Hæmoptysis	1 in 411	1 in 33131	1 in 265	1 in 21172	1 in 690	1 in 1726	1 in 459	1 in 13100
Phthisis	1 in 188	1 in 285	1 in 164	1 in 232	1 in 493	1 in 575	1 in 180	1 in 294
Catarrhus Acutus	1 in 10	1 in 11043	1 in 10	1 in 1924	1 in 66	1 in 3453	1 in 10	1 in 3275
Catarrhus Chronicus	1 in 60	1 in 4141	1 in 53	1 in 1323	1 in 345	1 in 726	1 in 44	1 in 1455
Asthma Period. Conv.	1 in 753	1 in 33131	1 in 2352	1 in 21172	1 in 690	None.	1 in 2381	1 in 26201
Dyspnœa Continua	1 in 10068	1 in 33131	1 in 1058	None.	1 in 3453	1 in 3453	1 in 534	1 in 5240
Pertussis	1 in 33131	None.						

C. BRITISH AMERICA.

	Bermuda.		Nova Scotia and New Brunswick.		Canada.		Newfoundland.	
	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
Pneumonia	1 in 488	1 in 2806	1 in 80	1 in 893	1 in 56	1 in 729	1 in 149	1 in 3797
Pleuritis	1 in 200	1 in 3741	1 in 570	None.	1 in 461	1 in 12922	1 in 1863	None.
Hæmoptysis	1 in 255	1 in 2800	1 in 446	1 in 13403	1 in 383	1 in 5025	1 in 186	None.
Phthisis	1 in 112	1 in 207	1 in 179	1 in 241	1 in 172	1 in 276	1 in 248	1 in 286
Catarrhus Acutus	1 in 10	1 in 800	1 in 7	1 in 2062	1 in 3	1 in 1966	1 in 5	None.
Catarrhus Chronicus	1 in 76	1 in 863	1 in 40	1 in 812	1 in 60	1 in 1391	1 in 1695	1 in 1863
Asthma Period. Conv.	1 in 935	1 in 11234	1 in 1276	None.	1 in 4522	None.	1 in 414	None.
Dyspnoea Continua	1 in 320	None.	1 in 687	1 in 26806	1 in 793	1 in 12922	1 in 177	None.
Pertussis	—	—	—	—	1 in 45228	None.	—	—

Before we dismiss the facts relating to climate, it is worthy of note, that of all the localities embraced in this report, in which British troops serve—at home, in the Mediterranean, or in Canada,—the most marked immunity from the production or development of consumption, and other pulmonary affections, belongs to Santa Maura, which is the

exception to which I have already referred. In further illustration of this, the following table, copied from the report, furnishes a comparative view, according to another mode of grouping, of the frequency of these affections in the island in question, and in three other Mediterranean stations.

TABLE XIII.

	Santa Maura, 1,254.				Corfu, 16,963.				Malta, 21,172.				Gibraltar, 33,131.			
	Admitted.		Ratio per 1000.		Admitted.		Ratio per 1000.		Admitted.		Ratio per 1000.		Admitted.		Ratio per 1000.	
Catarrh	92	0	73.36	0	2077	18	122.44	1.06	2402	27	113.45	1.27	3552	11	107.21	.33
Consumption & spitting of blood ..	5	0	3.99	0	151	70	8.90	4.13	208	92	9.82	4.34	254	117	7.67	3.47
Other diseases of the lungs ..	15	1	11.96	.80	232	15	13.68	.86	358	7	16.91	.33	567	23	17.11	.69

Only five admissions for phthisis and hæmoptysis, and not one death, among 1254 individuals, or a mean force of 125, occurred throughout ten years; and according to previous reports there were only three admissions in fifteen years. Had this immunity been confined to deaths from phthisis and other chronic diseases, the reporters state, that they might have been disposed to attribute it to several of the cases having been sent to Corfu, but it is manifested in the acute form, and more especially in the admissions; they further remark, "that this is not an accidental circumstance depending upon the irregularities which occasionally arise from the smallness of the numbers under observation, may be inferred from the peculiarity having occurred during the previous twenty years, when the mortality by this class of disease was scarcely half as high as in any of the other islands".

These circumstances render the question of the topography of the island highly interesting, not to say important, and I know no better source of information than Colonel Tulloch's former report. Santa Maura is about twenty-three miles long by ten broad, situated 39° N. Lat. 20° 30' E. Long., and about a hundred yards from the mainland of Greece. It has a chain of mountains running north and south through its whole extent, and rising in some places to 3000 feet, with secondary ridges intersecting the island in various directions. The soil is alluvial, or a rich loamy earth, tenacious of moisture, generally very scanty, the surface exhibiting to view a large proportion of bare rock interspersed with small patches of verdure. There are no rivers, but torrents flow from the mountains during the winter months, converting some of the valleys into lakes and marshes during the rainy season. The temperature is extremely variable, its annual average about 65½°, seldom falling to the freezing point in the low grounds, but occasionally there is snow on the hills. The range of the thermometer in autumn sometimes exceeds 20° in twenty-four hours. The quantity of rain and the seasons in which it falls are much the same as in the Ionian Islands generally, in which the mean of nine years was 44.86 inches. Like the rest of the Ionian Islands, it does not appear to possess any immunity from extremes of dryness and moisture, and of tempestuous and calm weather, which often succeed each other in a few hours; it is extremely liable also to mists and

rain with the south winds, and is subject to earthquakes sometimes continuing without intermission for several weeks. When the wind blows from the snow-capped hills the sensation of cold is said to be experienced as strongly as in more northern latitudes. There is only one fresh-water lake of any extent, about six miles to the south of the town, in the bottom of a valley surrounded by high mountains, which becomes dry in summer, and the soil produces rich crops. The principal fortress, with the barracks, is far from being favourably situated, as this stands on a low narrow strip of land close to a shallow muddy lagoon. The troops have no duty to perform beyond the ordinary guards, which do not come round oftener than about once in five days. Owing to the low price of wine and spirit the facilities for intoxication are very great, and in none of the islands have so many cases of *delirium tremens* occurred. The prevalent diseases, both among the troops and the natives, are fevers, continued, remittent, and intermittent, but particularly remittent fever, and the experience of this island tends to support the conclusion that tuberculosis pulmonalis is less common in low marshy situations where these fevers prevail.

This description, taken with the fact of the long continued comparative immunity of the troops from tuberculosis, is extremely interesting. It is only to be regretted that the numbers are not larger, so as to inspire more confidence in the result. It is suggested in the report, as worthy of consideration, whether a sanatorium for soldiers labouring under chronic diseases of the lungs might not be established there with advantage, for the whole command. Considering the present state of the question respecting the influence of climate over tuberculous diseases, I should say that, even as an experiment only, this would be most desirable.

The statistical reports before us furnish some new facts by which we may estimate the influence exercised by season over tuberculous diseases. In my work, I have shown from a variety of records, that contrary to the general opinion, the season of the year appears to have little or no relation, as a cause, to tuberculosis pulmonalis. (On *Tuberculosis* p. 507). This result was arrived at from data contained in the tables of the Registrar General, and the Army Reports previously published; and in the recorded in-

vestigations of the point by Louis and other individuals. From these documents, it appeared that neither the occurrence of phthisis, nor the mortality, is materially greater or less in spring, summer, autumn or winter, in any of the countries where the disease prevails. The statistics before us are, upon the whole, confirmatory of this view. By the first table of the present series of papers, the deaths from tuberculosis returned to the Registrar General during October, November, December, January, February and March, were 4,867; and during April, May, June, July, August, September and October, 5,008. The deaths from phthisis during the same periods, were, respectively, 3,473, and 3,462; although, taking the latter disease alone, there is a slight excess in the earlier months of the year, thus:—

For the Quarter ending March 27	1,811
" " June 26	1,790
" " Sept. 25	1,672
" " Dec. 25	1,662

In exemplification of the same subject, the following table is drawn from the Army Reports. On examining its details, there is, perhaps, as remarked in the report, no cause of surprise at the uniformity of the results in the Mediterranean commands, where the climate is, comparatively, so little variable according to the season of the year, but if we had not been apprised of it by the facts detailed in the former reports, the case, as respects British America, would be otherwise.

In the first place, the ratio per 1000 in hospital with pulmonary diseases, in Great Britain, on the first day of the month, during ten years, was as follows:—

January	8.1	July	5.6
February	8.6	August	4.8
March	8.2	September	5.3
April	7.2	October	5.2
May	6.7	November	5.8
June	5.4	December	6.7

TABLE XIV.

The Number of Admissions into Hospital, and Deaths from Pulmonary Diseases, in every Month throughout the Year, among the Troops serving in the Mediterranean and in British America.

	MEDITERRANEAN.								BRITISH AMERICA.							
	Gibraltar.		Malta.		Ionian Isles.		Total.		Bermuda.		Nova Scotia and New Brunswick.		Canada.		Total.	
	Adm.	Deaths.	Adm.	Deaths.	Adm.	Deaths.	Adm.	Deaths.	Adm.	Deaths.	Adm.	Deaths.	Adm.	Deaths.	Adm.	Deaths.
January	290	15	263	16	321	10	877	41	149	6	392	14	1325	50	1744	64
February	310	14	215	10	283	13	808	37	115	7	285	24	1296	67	1581	91
March	361	10	200	9	316	10	877	29	104	8	379	21	1184	63	1563	84
April	294	9	221	14	273	13	788	36	135	8	392	16	1215	60	1607	76
May	336	11	202	9	300	13	838	33	131	3	357	12	1172	48	1540	60
June	315	7	212	5	244	7	771	19	100	3	339	14	961	40	1300	54
July	304	3	182	6	214	3	700	12	94	6	304	13	1209	36	1513	49
August	289	4	205	9	211	11	705	24	149	7	279	12	974	39	1255	51
September	283	8	197	5	237	10	717	23	104	6	248	8	812	39	1060	47
October	279	10	259	10	218	11	756	31	123	10	298	7	1058	29	1356	36
November	188	13	224	16	193	9	605	38	96	6	335	6	1094	33	1420	39
December	317	11	217	13	271	13	805	37	97	7	405	10	1212	51	1617	61

Although, in Great Britain, pulmonary diseases as a class, among the troops, are at their minimum between July and October, the difference, as compared with the coldest months, in the number under treatment, is only as 5 to 8. In Canada, there is a larger proportion of deaths from December to April; but, on analysing the causes of death, it appears that 124 of the total number resulted from pneumonia, and 327 from phthisis, and since, in all probability, although it is not stated in the report, death from pneumonia was most frequent during the severe season, this would make up the difference, and leave phthisis as fatal at one season as at another. In the Bermudas, where there were only four deaths from pneumonia, there is no marked difference in the mortality in the cold as compared with the warm season.

Taking diseases of the lungs, in the aggregate, the slight differences which exist between the proportions of cases occurring during the summer and winter quarters, in North America, are shown by the following reduced table of the numbers attacked:—

TABLE XV.

	Canada.	Nova Scotia and New Brunswick.	Bermuda.
First Quarter	3805	1056	368
Second Quarter	3348	1088	366
Third Quarter	2995	831	347
Fourth Quarter	3364	1038	316

Thus, in Canada, the excess of cases in the first quarter of the year when the weather is "most severe", we may say intense, is only one-fourth more than between July and September; and in Nova Scotia the only difference of any importance is about one-fifth in favour of the quarter from July to September. The mean temperature between this

quarter and the one which precedes it, differed about 40°, being to that extent warmer; but the quarter ending June 30th, which is much warmer than either of the two that precede it, presents absolutely the most cases of pulmonary disease. At all events, we have no evidence that the season of the year exercises any uniform influence, over the production of tuberculosis, in promoting its development as a disease of the lungs, or in hastening or increasing its fatality.

TABLE XVI.

The number of cases of pneumonia with the proportion of deaths and recoveries, and the number of admissions into hospital for phthisis among the troops in the United Kingdom, the Mediterranean and British America, and in the aggregates of the naval and military forces serving in the Mediterranean.

	Pneumo.	Died.	Recovered.	Phthisis.
United Kingdom:				
Dragoon guards & dragns.	337	24	313	386
Foot guards	539	42	497	654
Infantry of the line	1897	155	1742	1657
Gibraltar	333	20	313	176
Malta	287	6	281	129
Ionian Isles	232	16	216	145
Santa Maura	6	1	5	5
Bermuda	23	4	19	100
Nova Scotia, N. Brunsw. etc.	335	30	305	149
Canada	1589	124	1455	524
Newfoundland	25	1	24	15
Naval force in Mediterranean	2598	86	2512	437
Military force in ditto	2281	92	2189	629

These statistics show an absence of any relation between the frequency of inflammatory affections of the lungs and of

phthisis. In a former part of this paper it was stated that during the previous twenty years, as compared with the last ten years, at Gibraltar, inflammatory affections were more prevalent, and at Malta they were one-third more in number, and yet, at both stations, the amount of consumption was almost identical throughout the two periods. That the fact of this total want of relation may be clearly seen, I have constructed Tables XVI and XVII.

Thus, in Bermuda, where there were only 23 cases of pneumonia, there were 100 cases of phthisis, and in Nova Scotia where there were nearly fifteen times as many cases of pneumonia, there were only 150 cases of phthisis. In Canada, with 1,589 cases of pneumonia, there were only 524 cases of phthisis, whereas, in the foot guards at home, with only 497 cases of pneumonia, there were 654 of phthisis. Again, in the naval force, 2,598 cases of pneumonia correspond with 437 cases of phthisis, while in the military force, 2,281 cases of pneumonia correspond with 629 of phthisis.

TABLE XVII.

The number of cases of "acute and chronic catarrh", with the proportion of deaths and recoveries, and the number of admissions into hospital for phthisis, among the troops, in the United Kingdom, the Mediterranean, and British America, and in the aggregates of the naval and military forces serving in the Mediterranean.

	Catarrh.	Died.	Recovered.	Phthisis.
United Kingdom:				
Dragoon guards & dragns.	7321	41	7380	386
Foot guards	4892	14	4878	654
Infantry of the line	22863	190	22673	1637
Gibraltar.....	3553	11	3541	176
Malta	3402	27	3375	129
Malta fencibles	62	3	59	7
Ionian Isles	2980	26	2954	145
Santa Maura	92	None.	92	5
Bermuda.....	1246	68	1178	100
Nova Scotia, N. Brunsw. etc.	4185	46	4139	149
Canada	11540	111	11429	524
Newfoundland	651	2	649	15
Naval force in Mediterranean	21971	27	21944	437
Military force in ditto	11314	83	11231	629

For "catarrh" we may no doubt read "bronchitis", in its various degrees; and thus, the principle that I have elsewhere laid down, that bronchitis can in no sense be regarded as a cause of tuberculosis, and that bronchitis alone can in no sense be regarded as a cause of consumption, is confirmed by these statistics. The sailor, who is half his time on deck, in periods of four hours duration, every night and day, constantly leaving his bed at twelve at night, or four in the morning, and passing from an over heated atmosphere to the open air, with exposure to all the vicissitudes of the weather, is twice as frequently attacked with catarrh or bronchitis as the soldier, who is only on guard every fourth or fifth night, and remains exposed but for two hours at a time, during which he is generally protected by his sentry box or great coat; and with this increased liability to bronchitis on the part of the sailor, and the actual occurrence of double the amount of the catarrhal affections, the sailor is much less liable to consumption than the soldier.

I have thus extracted from the original reports the statistics having a direct reference to tuberculosis, and more especially to pulmonary consumption, and placed the whole of the facts in a connected statement before the readers of the ASSOCIATION JOURNAL, believing that they are well calculated to promote the study of some very important points in the history of tuberculous diseases. I shall have occasion to refer to the tables in a future paper: in the meantime, they appear to justify the following conclusions:—

That tuberculosis is more frequent in the army, at home and abroad, than in the civil population of the United Kingdom.

That it is more frequent in the army serving at home than in the army serving either in the Mediterranean or in British America.

That it is more frequent in the army serving in the Mediterranean and Bermuda than in Canada, Nova Scotia, New Brunswick, etc., and Newfoundland.

That it is much more frequent in the army than in the navy, in the home and in the Mediterranean services.

That the season of the year has no considerable influence over the production of tuberculosis, or its local expression in the lungs, nor over its fatality, either in the United Kingdom, the Mediterranean, or in British America.

That there is no fixed relation between the amount of inflammatory diseases of the lungs and the amount of tuberculosis, or of consumption, in any of the climates. Where there is the greatest number of cases of inflammatory affections, there is often found the smallest number of cases of consumption; where there is the smallest number of inflammatory attacks, recoveries, or deaths, there is frequently the greatest number of consumptions; and in a third group, the proportionate frequency of inflammatory affections of the lungs and of consumption have a close correspondence.

3, Norfolk Crescent, Hyde Park, Oct. 1853.

CASE OF FRACTURE OF THE CRANIUM IN AN INFANT AT BIRTH.

By J. G. SWAYNE, M.D., Lecturer on Midwifery at the Bristol Medical School.

[Read at the Quarterly Meeting of the Bath and Bristol Branch of the Association, Sept. 29th, 1853.]

On Monday, June 6th, Mr. Coster, one of my pupils, was called to attend Mary M., aged 29, living in Eugene Street; the messenger desiring him to come as speedily as possible. He arrived at the house in less than a quarter of an hour, when he found the child born, and the funis broken about three inches from the umbilicus. He immediately secured the short end with a ligature, to prevent further hæmorrhage (not much, however, had occurred from the source); and then proceeded to remove the placenta, which was already detached. He was informed by a woman who was present, that the labour came on very unexpectedly, and that the patient was delivered in the upright position, the child falling on the floor. On examining the child's head, he discovered that it was much bruised, and discoloured with blood extravasated beneath the scalp and over the left parietal bone. He applied water-dressing to the injured part, and visited the mother and infant on the two following days. They both seemed to be progressing favourably, and the swelling upon the child's head had become somewhat reduced in size. For the next three days, the child took the breast fairly, as well as some food, and appeared in other respects well, until Sunday, the 12th (six days after its birth), when the mother perceived that it would no longer suck, and that the countenance was much altered.

Mr. Coster was again sent for about eight o'clock in the evening of the same day, when he found the child struggling in a severe paroxysm of convulsions. The fits recurred every five or ten minutes, and appeared to affect all the muscles of the body. The face was livid, the pulse very quick, and the pupils turned upwards, and apparently contracted. Mr. Coster directed the child to be placed in a warm bath, with cold effusion to the head, and 3j of oleum ricini to be taken immediately. The fits returned very frequently during the early part of the night, and the child seemed to be sinking fast. The pulse was very weak, and almost imperceptible. The bowels had been moved by the oil. The warm bath was repeated, with the addition of a spoonful of mustard; but the child died at half-past twelve the same night.

A post mortem examination was made on Tuesday by my request, in which I was assisted by my friend Mr. Coe, and my pupils Messrs. Coster and Granville. The child had the appearance of a healthy male infant, born at the full time.