

places and also the underground temple in the vicinity of Hazar Rama Chendra. It appears underground now, because excavations have brought to light that the temple proper is underground as it now exists. Whether this was originally really so built, or became filled in by earth and *débris* at the time of the destruction of Vijayanagar is not certain; probably this was the case. This brought us to the end of our sight-seeing, and well pleased we were to have had the opportunity of making the visit to such an interesting place in Hindu history. Not a little of the pleasure was that we had the advantage of the company of Mr. Sabba Ramayya to show us round and give us information.

Current Literature.

Further Observations on the Results of Anti-typhoid Inoculations amongst the German Troops in South-West Africa.—A preliminary communication on the results of the German experience of anti-typhoid inoculations, of which a translation appeared in the *JOURNAL OF THE ROYAL ARMY MEDICAL CORPS* of March, 1907, was published in the *Archiv. für Schiffs- und Tropen-Hygiene* in December, 1905. In the issue of the *Deutsche Militärärztliche Zeitschrift* of April 24th, 1907, a further communication is published by Stabsarzt Dr. Kuhn, who was attached to the German headquarters in South-West Africa. His notes are taken from material in the office of the Principal Medical Officer of the Command, and have, therefore, a claim to being considered officially accurate. They are based on information obtained from the lists of men inoculated and from the returns of enteric fever submitted to headquarters every ten days. Complete material is not yet available, especially in regard to the medical history of the cases, and, as Dr. Kuhn remarks, on this account a conclusive opinion regarding the value of the inoculations cannot yet be formed.

The lists of men inoculated include up to date 7,287 men, some of whom have been inoculated once and some more than once. In none have had effects following inoculation been brought to notice. At the commencement, *i.e.*, up to May, 1905, the dose of the first inoculation was 0.5 c.cm., for the second 1.0 c.cm., and for the third 1.5 c.cm., of dead agar cultures of typhoid bacilli. The inoculation material was obtained from the Institute of Infectious Diseases at Berlin. The symptoms after inoculation varied in an extraordinary manner amongst individuals; some showed no general symptoms at all, but the majority had slight fever and malaise lasting for one or more hours. About 12 to 17 per cent. of the inoculated suffered from vomiting. About 2 per cent. on an average had high fever up to 104° F., or long-continued malaise up to forty-eight hours. The local reaction was practically the same in all cases, and consisted of redness and swelling at the site of inoculation over an area that could be covered by a saucer. This caused severe pain

for one day, and as a rule had not completely disappeared after two days. In most cases the men inoculated were unfit for duty until the second day.

The symptoms after inoculation were exceptionally severe in the case of the first inoculations of the men of Contingent "Y," on May 18th and 19th, 1905, 38·3 per cent. suffering from vomiting. Although this was probably due to the excessive heat at the time, the doses were reduced afterwards to 0·3, 0·8, and 1·0 c.cm. in order to avoid these severe effects. The general symptoms after this were less severe, and vomiting occurred only in a small proportion of the inoculated. The period between the inoculations was seven to fourteen days, so that inoculation was completed in three or four weeks.

Dr. Kuhn then goes on to remark that the above observations have fulfilled the first two of the conditions laid down regarding the practice of anti-typhoid inoculations, namely: (1) Simplicity and little interference with military duty in carrying out the process of inoculation, and (2) The slightest possible physical disturbance subsequent to inoculation. He then proceeds to discuss how far the third requirement of inoculation has been met, namely, undoubted diminution in sickness and mortality owing to immunity acquired by inoculation.

Of the 7,287 men inoculated, 1,950 were inoculated once, 3,615 twice, 1,578 three times, while, as regards 144 of the men, the number of inoculations is uncertain. Deducting these 144, 27·30 per cent. of the remaining 7,143 were inoculated once, 50·60 twice, and 22·10 per cent. three times. The number of inoculated is made up as follows: 312 were inoculated during 1904, of whom 262 were inoculated before and during the voyage to South-West Africa, and about 50 in South-West Africa. Of the 7,051 men who went out in Contingents "S" to "Z 9" after December 31st, 1904, 6,075 men were inoculated before or during the year 1905, and 1,971 from the beginning of 1906 up to June, 1906. In South-West Africa itself about 900 men were inoculated from the beginning of January up to June, 1905, when inoculations there were discontinued on account of fear of exposure of infection during the negative phase.

Dr. Kuhn gives the table on next page, showing the average strength and enteric statistics for May, 1904, to February, 1907, month by month.

The figures show a steady diminution in sickness and mortality from enteric fever after the first year. From May to the end of 1904 the admission rate was 42 per thousand, and the death-rate 4·6 per thousand; in the first half year of 1905 the ratios were 23·0 and 1·5; in the second half of 1905, 12·0 and 0·5; in the first half of 1906, 10·0 and 0·7; in the second half of 1906, 6·0 and 0·4; in the first two months of 1907 the ratios were 5·0 and 0·8 respectively. From this Dr. Kuhn concludes that anti-typhoid inoculations, which began to have effect from the commencement of 1905, must be regarded as having played a part in the reduction of enteric fever, although, he says, other favourable conditions must not be excluded.

At the beginning of 1905 about 262 men of the 10,305 then in the territory had already been inoculated, and it is estimated that about a thousand men had already had enteric fever, so that it is inferred that at the beginning of 1905 there were about 9,133 men in the territory who had not yet acquired immunity by inoculation. Of this number 900 were afterwards inoculated. Subsequently 6,075 inoculated and 976 un-

Current Literature

649

inoculated entered the territory, so that altogether there come under review 7,287 inoculated and about 9,209 uninoculated, apart from any consideration of those who had already recovered from enteric fever.

Month	Average strength	Average number of enteric cases	Proportion of cases of enteric per 1,000 of strength	Deaths from enteric	Proportion of deaths per 1,000 of strength
May, 1904	3,267	226	70	10	3·1
June ,,	3,256	223	68	12	3·7
July ,,	5,100	201	39	16	3·1
August ,,	5,789	130	22	17	2·9
September ,,	6,756	172	25	35	5·2
October ,,	7,467	186	25	36	4·8
November ,,	7,517	305	40	62	8·1
December ,,	8,195	424	50	48	5·9
January, 1905	10,395	336	32	12	1·2
February ,,	11,513	226	20	12	1·0
March ,,	11,874	194	16	13	1·1
April ,,	13,328	246	19	21	1·6
May ,,	13,478	309	26	27	2·0
June ,,	13,536	348	26	26	1·9
July ,,	13,978	266	19	22	1·6
August ,,	13,941	201	15	6	0·4
September ,,	13,950	159	12	8	0·6
October ,,	14,126	129	9	12	0·8
November ,,	14,118	131	9	12	0·8
December ,,	14,398	162	11	15	1·0
January, 1906	14,678	146	10	18	1·2
February, ,,	15,849	167	10	18	1·1
March ,,	15,719	154	10	9	0·6
April ,,	15,588	159	10	8	0·5
May ,,	15,296	167	11	7	0·5
June ,,	15,026	156	10	8	0·5
July ,,	14,756	137	9	5	0·3
August ,,	13,840	78	6	8	0·6
September ,,	12,676	47	4	0	0·0
October ,,	11,384	68	6	3	0·3
November ,,	10,287	50	5	3	0·3
December ,,	9,596	60	6	5	0·5
January, 1907	9,131	50	5	7	0·7
February ,,	8,696	43	5	8	0·9

The statistical cards of enteric fever throw light upon the manner in which these two large groups have been affected by enteric fever. These cards were sent in from the various hospitals in the neighbourhood of Windhuk to the Principal Medical Officer's office in Windhuk from the beginning of April, 1905, and from out stations at a later date. They were continued up to date, *i.e.*, February, 1907.

1,280 cards were thus available for Dr. Kuhn's investigations, and he states this number corresponds very nearly with the reported number of cases of enteric fever. Of the 1,280 cards three did not contain sufficiently precise entries, so that the actual number used for statistical purposes is 1,277. Of this number 906 represent cases of enteric fever amongst men who were not inoculated, and 371 cases amongst the inoculated. The cases therefore amongst the uninoculated are equivalent to 9·84 per cent.

of the strength of uninoculated troops, and the cases amongst the inoculated to 5.09 per cent. of inoculated strength.

Dr. Kuhn concludes from this that the inoculated have suffered less than the uninoculated, and that inoculation has consequently caused a diminution of enteric fever. This, he says, is all the more probable because the inoculated were just as much exposed to risk as the uninoculated, and, further, when the authorities commenced to send men home, from the end of 1904 onwards, those who were longest in South-West Africa went home first, and these were more likely to be uninoculated than inoculated men, so that from 1905 onwards the number of uninoculated in the territory was being gradually diminished.

Differentiating the cases according to severity of attack, Dr. Kuhn presents the following statistics:—

	Uninoculated	Inoculated
Light attacks	331 (36.55 per cent.)	186 (50.13 per cent.)
Moderately severe ..	225 (24.85 per cent.)	96 (25.88 per cent.)
Severe	234 (25.80 per cent.)	65 (17.52 per cent.)
Fatal	116 (12.80 per cent.)	24 (6.47 per cent.)
Total	906 (100 per cent.)	371 (100 per cent.)

These figures indicate that the inoculated show a higher per cent. of light cases and a lower per cent. of severe cases, while both the uninoculated and inoculated show practically the same percentage of moderately severe cases.

In the series of 424 cases, the statistics of which were given in the *JOURNAL OF THE ROYAL ARMY MEDICAL CORPS* for March, 1907, the following were the results:—

	Uninoculated	Inoculated
Light cases	42.3 per cent.	66.0 per cent.
Moderately severe cases ..	21.3 "	20.0 "
Severe cases	25.3 "	10.0 "
Fatal cases	11.1 "	4.0 "

Comparing this series with his own series of figures, Dr. Kuhn comes to the conclusion that the course of enteric fever cases has been more unfavourable both in the inoculated and uninoculated in his series of cases than in the preliminary series, because the percentage of severe and fatal cases has increased. He makes no allowance for probable error in dealing with small numbers, and endeavours to explain the less favourable course of the disease by attributing it to difficulties in treatment in the southern area of operations in consequence of defective means of communication.

The next series of statistics shows the period after inoculation at which the cases among the inoculated contracted the disease. The following results are given:—

	<i>Light Cases.</i>		
	Once inoculated	Twice inoculated	Three times inoculated
One week	1	2	—
Two weeks	1	2	—
Three weeks	—	1	—
Four weeks	1	2	—
Two to six months ..	30	52	23
Seven to twelve months ..	13	20	12
Over twelve months ..	13	12	1
Total	59	91	36

Current Literature

651

Moderately Severe Cases.

	Once inoculated	Twice inoculated	Three times inoculated
One week	—	—	—
Two weeks.. .. .	—	—	—
Three weeks	—	—	—
Four weeks	—	—	—
Two to six months	11	22	11
Seven to twelve months.. .. .	7	11	7
Over twelve months	5	14	8
Total	23	47	26

Severe Cases.

	Once inoculated	Twice inoculated	Three times inoculated
One week	2	2	—
Two weeks	—	—	—
Three weeks	—	—	—
Four weeks.. .. .	—	—	—
Two to six months	12	12	4
Seven to twelve months	2	10	3
Over twelve months	11	4	3
Total	27	28	10

Fatal Cases.

	Once inoculated	Twice inoculated	Three times inoculated
One to four weeks	—	—	—
Two to six months	5	3	1
Seven to twelve months	5	1	1
Over twelve months	4	4	—
Total	14	8	2

There have therefore been 123 cases amongst those who have been inoculated once, 174 amongst those inoculated twice, and 74 amongst those inoculated three times. These numbers represent 6·31 per cent, 4·81 per cent., and 4·69 per cent. respectively of the strength of those inoculated once, twice and three times. Dr. Kuhn regards the results sufficient to warrant the conclusion that those inoculated once suffer more frequently than those inoculated twice, and those inoculated twice more than those inoculated three times, and he adds, when the percentages are compared with that of the uninoculated, namely, 9·84 per cent., the figures give a good idea of the results of inoculation.

When he distributes the cases amongst those inoculated once, twice, or three times into the four groups of light, moderately severe, severe and fatal, he brings out the following percentages:—

	Inoculated once	Inoculated twice	Inoculated three times
Light cases	31·72 per cent.	48·93 per cent.	19·35 per cent.
Moderately severe cases	23·95 „	48·96 „	27·09 „
Severe cases	41·54 „	43·09 „	15·40 „
Fatal cases	58·33 „	33·33 „	8·33 „

This brings out more clearly the favourable effects of the greater number of inoculations.

In discussing the evidence of a negative phase, Dr. Kuhn emphasises the fact that none of the cases amongst those inoculated three times occurred during the first four weeks after inoculation, and he concludes

from this that it is questionable whether the negative phase exists after the third inoculation, but in this connection he considers that it has yet to be determined whether this is due to the third inoculation itself, or to the greater period that has elapsed since the first and second inoculations.

The next investigation from the statistics is made to determine the duration of the immunity conferred by inoculation. On this point the following figures are presented:—

Cases Occurring between Two and Six Months after Inoculation.

Light	105 (56.45 per cent.)
Moderately severe	44 (23.65 per cent.)
Severe	28 (15.05 per cent.)
Fatal	9 (4.85 per cent.)

Cases Occurring between from Seven to Twelve Months after Inoculation.

Light	45 (48.91 per cent.)
Moderately severe	25 (27.17 per cent.)
Severe	15 (16.31 per cent.)
Fatal	7 (7.61 per cent.)

Cases Occurring more than Twelve Months after Inoculation.

Light	26 (32.91 per cent.)
Moderately severe	27 (34.88 per cent.)
Severe	18 (22.78 per cent.)
Fatal	8 (10.13 per cent.)

In considering these figures Dr. Kuhn comes to the important conclusion that they indicate that the immunity conferred by inoculation is lost after one year. He gives as his reason for this that the percentage of the moderately severe, severe and fatal cases occurring amongst the inoculated after one year is increased by 14.18, 12.78, and 6.13 per cent. respectively, as compared with the corresponding figures of the first series of cases previously published, and that the percentage of light cases has decreased by 33.09 per cent. Further, he states that the severer cases, after one year amongst the inoculated, show almost as high a proportion as the uninoculated. To show this he gives the figures of the light, moderately severe, severe and fatal cases amongst the uninoculated for the year 1906, namely, 81 (30.92 per cent.), 96 (36.63 per cent.), 52 (19.85 per cent.), and 33 (12.59 per cent.) respectively.

He points out that, as compared with the figures previously published amongst uninoculated, the percentage of severe cases is considerably lower and the fatal cases only slightly higher, a fact that is in marked contrast with the considerable increase in the percentage in the severe and fatal cases amongst the inoculated one year after inoculation.

The next subject of enquiry was that of complications amongst the inoculated cases. These occurred in 23, or 12.37 per cent., of the light cases; in 15, or 15.62 per cent., of the moderately severe; in 23, or 35.38 per cent., of the severe, and in 12, or 50 per cent., of the fatal cases.

The total number is equivalent to 19.7 per cent. of all the cases amongst the inoculated, the complications being inflammation of the lungs, tonsillitis, bronchial catarrh, cardiac affections, and so on. Amongst the uninoculated, complications occurred in 36.42 per cent., namely, 44, or 13.29 per cent., amongst the light cases; 79, or 35.11 per cent., amongst the moderately severe; 145, or 61.96 per cent., amongst the severe, and 62, or 53.45 per cent., amongst the fatal cases. Concurrent diseases, such as malaria, dysentery and venereal diseases, occurred in 24, or 3.71 per

cent., of the inoculated cases, and in 56, or 6.16 per cent., in uninoculated cases. Dr. Kuhn thus draws attention to the fact that complications are nearly twice as great amongst the uninoculated as amongst the inoculated.

The last series of statistics in the article deals with the question of the effects of dosage.

The following results are given :—

		<i>Light Cases.</i>			
First doses		Once inoculated	Twice inoculated	Three times inoculated	
0.5 c.c.	.. ..	41	69	..	24
0.3 c.c.	.. ..	7	11	..	11
Uncertain	.. ..	11	11	..	1
Total		59	91	..	36

		<i>Moderately Severe Cases.</i>			
First doses		Once inoculated	Twice inoculated	Three times inoculated	
0.5 c.c.	.. ..	12	39	..	14
0.3 c.c.	.. ..	8	8	..	11
Uncertain	.. ..	4	—	..	1
Total		24	47	..	26

		<i>Severe Cases.</i>			
First doses		Once inoculated	Twice inoculated	Three times inoculated	
0.5 c.c.	.. ..	22	22	..	7
0.3 c.c.	.. ..	5	2	..	2
Uncertain	.. ..	—	4	..	1
Total		27	28	..	10

		<i>Fatal Cases.</i>			
First doses		Once inoculated	Twice inoculated	Three times inoculated	
0.5 c.c.	.. ..	8	5	..	1
0.3 c.c.	.. ..	5	1	..	1
Uncertain	.. ..	1	2	..	—
Total		14	8	..	2

Practically the same number of men are said to have been inoculated with the larger dose as with the smaller, and it is remarked that comparatively few cases occurred amongst those who were inoculated with the latter.

Dr. Kuhn, however, does not believe that the lesser dose has been the cause of the presumed higher degree of immunity, but that the results are due to the fact that from June, 1905, onwards, when the smaller doses were commenced, the chances of infection had been considerably diminished. He gives the following conclusions :—

SUMMARY OF RESULTS.

- (1) A considerably smaller number of inoculated contracted enteric fever as compared with uninoculated.
- (2) A general diminution in sickness, consequent on a diminution in the risk of infection, has resulted from the general inoculation of the troops.
- (3) The course of the disease amongst the inoculated is on the average much more favourable than amongst the uninoculated.

(4) The course of the disease is more favourable in proportion to the number of inoculations.

(5) The negative phase does not appear to exist after the third inoculation.

(6) Immunity consequent on inoculation lasts about one year.

(7) Differences in the effects of varying strengths of inoculation cannot be determined from the statistics, because those who were inoculated with smaller doses only arrived in the colony after enteric fever had begun to decline.

PRACTICAL CONCLUSIONS.

(1) So long as there exists in South-West Africa special risks of enteric fever, only those men who have agreed to submit to anti-typhoid inoculation should be selected to be sent out.

(2) Every individual should be inoculated three times before he lands in South-west Africa.

(3) As the negative phase no longer exists after the third inoculation, the third inoculation can be made on the way out.

(4) The results so far achieved, should encourage scientific institutes to make further investigations into enteric inoculations, especially as regards the strength of the doses.

These statistics and conclusions are given as they appear in Dr. Kuhn's article. The statistics must be regarded as derived from official sources of information; the conclusions are apparently Dr. Kuhn's own conclusions. Everyone who is interested in the question of anti-typhoid inoculation, and, indeed, everyone who is concerned with the prevention of this scourge of armies in the field, must be grateful to Dr. Kuhn and the *Deutsche Militärärztliche Zeitschrift* for publishing this important series of figures. On this point there can be no difference of opinion. But the figures scarcely justify the far-reaching conclusions which Dr. Kuhn draws from them. In the first instance, none of the percentages are submitted to the test of the limits of probable error. If they were, the slight differences from which positive conclusions are drawn, as, for example, the very slight difference of 0.12 per cent. in the incidence of enteric fever on those inoculated twice as compared with those inoculated three times, or the difference of 3.53 per cent. between those not inoculated at all and those inoculated once, are considerably reduced, practically vanish, or even assume a totally opposite aspect under the application of Poisson's formula. But a still more interesting test is the comparison of these statistics in the gross with the statistics of the South African War of 1899-1902, and with the statistics of the Russo-Japanese War. The German South-West African Expedition shows a very high proportion of inoculated troops, namely, 7,287 out of an average strength of 11,367 for the thirty-four months shown. In the South African War the number of inoculated men was probably not much greater than one-tenth of the average strength of 209,404 for the thirty-one months of the campaign. In the South-West African expedition the deaths from enteric fever shown on the Table amount to 529, which is equivalent to 46.5 per thousand of average strength for the whole period, or to an annual ratio of 16.3 per thousand per annum.¹ In the South African War the total number

¹ It may be noted that Dr. Kuhn's statistics from the 1,277 card cases show only 140 deaths, but they do not cover the whole period apparently.

of deaths amongst officers and men from enteric fever was 7,648, or 36.6 per thousand, of average strength for the whole period and an annual ratio of 14.1 per thousand. In other words, the death-rates for enteric fever in two somewhat similar expeditions and in somewhat similar geographical areas were actually less amongst the troops which were least protected by inoculation. It may also be noted that the entirely uninoculated troops in the Russo-Japanese War also showed a less incidence of mortality from enteric fever, although in this case the geographical areas are not comparable. Admission-rates are of little value in these comparisons, because of the remarkable differences in methods of diagnosis. In South Africa, for example, it was the fashion latterly to call every case of continued fever enteric fever, and this fact swelled the admission-rate enormously, while at the same time it greatly diminished the case mortality. The enteric death-rates are therefore the best tests for comparative purposes, and one is driven to the conclusion that these important and valuable statistics from the German South-west African Expedition do not go very far to clear up the question of the ultimate value of anti-typhoid inoculations, although they are the best series of statistics on the subject, so far as the test of war goes, that has yet been published. It is disappointing, for example, to find so high an incidence as 5.09 per cent., with a mortality of .3 per cent., amongst troops to whom this prophylactic measure has been applied. In our own Army an organised system of testing the value of anti-typhoid inoculations, which is based on certain preliminary investigations and which eliminates sources of error as far as possible, is now in existence, and British medical science will, no doubt, be content to await the verdict of the Committee dealing with the question whenever the accumulation of facts warrants definite conclusions either of a negative or of a positive character.

W. G. M.

Experiments made during the Medical Manœuvres of the Military Government, Paris, 1906, in Lighting the Field of Battle.—Médecin-Major, 1st class, Jacob, Assistant Professor at the Val de Gracé, publishes the results of these experiments in the March numbers of the *Archives de Médecine et de Pharmacie Militaires*.

The existing regulations provide only four lanterns for regimental stretcher-bearers to each regiment, that it is to say, one lantern per battalion, and two lanterns for each field ambulance. This is insufficient, both as regards the number of the lanterns and as regards the quality of the light, to enable the bearers to work satisfactorily at night. Hence many proposals have been made for effectual lighting of the battlefield, and Jacob refers to previous experiments, commencing with an electric waggon, tried in 1886 in Germany, giving a light of 2,000 candle power, and Siemens and Halske's electric motor, tried in 1893. Nicolai, in 1899, and Rek, in 1902, experimented with portable acetylene apparatus. Wells' lamps were tried in Italy by Mendini in 1892, and by Warnecke in 1903, and various other devices, such as torches and flame apparatus, have been proposed. The Blériot acetylene lamp apparatus was considered the best of these.

Jacob was instructed to carry out experiments on these various methods during the medical manœuvres near Paris in 1906. He applied

first of all to the manufacturers to submit apparatus, and five responded, the apparatus being classified as follows:—

(1) *Apparatus carried on a Special Waggon.*—One only was tried, namely, the Gaiffe electric searchlight mounted on Gaiffe's Röntgen ray motor car. The light is very powerful, equal to a million candle power, and projecting a cone of light for one or two kilometres. It continues to work for four hours without changing the carbon, costs 4,500 francs, exclusive of the price of automobile and radiography apparatus, which is 18,000 francs.

(2) *Apparatus carried on a Small Cart by Two Men.*—Two of these apparatus were tried, the Fulgur and the Alpha. They are both acetylene lights, the former projecting light for about 50 or 60 metres, weighing 105 kilogrammes and costing 300 francs; and the latter weighing and costing less, but projecting a distance of about 500 metres.

(3) *Apparatus carried by One Man.*—Three were tried, namely, the Radignet and Massiot apparatus, the Blériot lamp already experimented with by Warnecke, and the Alpha lamp. The first of these is an oxygen light apparatus, weighing 13 kilogrammes, using in one hour 125 cc. of ether and 100 litres of oxygen. It costs 300 francs, and can be used for two hours without being recharged. The Blériot apparatus produces a luminant gas by means of "acetylithe" (calcium carbide previously dipped in petroleum and afterwards encased in glucose). It costs 37 francs and is carried as a lantern. The Alpha lamp is formed by acetylene dissolved in acetone. The apparatus costs 300 francs and is carried in the hand.

The six apparatus mentioned above were tried between 9 and 10 o'clock at night on suitable ground, *i.e.*, ground with hollows, undergrowth, long grass, ditches, &c. A stretcher squad with a medical officer and quartermaster worked with each light. The tests were made to determine the following requirements:—

(1) Intensity of light; (2) simplicity and ease of handling; (3) capacity of being worked by stretcher bearers or men of the Army Medical Service; (4) freedom from danger; (5) ease of transport; (6) strength; (7) moderation in price.

The Gaiffe projector gave the most brilliant light. In all other requirements it failed.

The Fulgur apparatus gave very bad results. It required experts and a large quantity of water, was very fragile and gave only a feeble projection.

The Alpha apparatus gave good results, but had the drawback of all powerful lights, namely, that of intensifying the darkness of places which the light could not reach.

The Radignet and Massiot apparatus gave a good and convenient light, but is complicated and fragile.

The Blériot and Alpha lamps were the most satisfactory, as regards all requirements of such lights.

Jacob's conclusions are exactly those formed by the writer of this note, who was present during the experiments to which the article refers, namely, that powerful searchlights do not fulfil the requirements of lighting battle-fields for searching for wounded, chiefly because, not only do they fail to illuminate the reverse sides of slopes, hollows, ditches, &c.

just those places where wounded seek cover, but they actually intensify the darkness of these spots and make it difficult for the stretcher-bearers to see wounded in them. Hand lights, such as can be carried with each stretcher squad, are the only satisfactory lights for the purpose.

W. G. M.

New German Diagnosis Tally.—(*Deutsche Militärärztl. Zeitschrift*, February 5, 1907). The old red and white diagnosis tallies have been replaced by a tally of uniform pattern. It is made of stout bank envelope paper.

Two red margins, which can be torn off, run down either side of the tally, and are intended to indicate whether the wounded man is fit or unfit for transport or capable of walking. If one margin is torn off this indicates fitness for transport; if both are torn off, fitness to walk; if neither is torn off, unfitness for transport. The printing on one side is as shown in diagram.

	Unfit for transport ..	Two red margins.
	Fit for transport ..	One red margin.
	Fit to walk	No red margin.
Red margin.	Name. (Rank, Regiment.)	
	Wound. (Disease.)	
	Elastic tourniquet. (Time of application.)	
	Administration of strongly-acting drugs. (Time, dose).	
		Red margin.

On the reverse the medical officer signs his name and makes any remarks as to further treatment, &c.

Twenty-five tallies are bound in one block, with the following instructions within the cover:—

(1) Only medical officers may fill in the tally; (2) the tally is to be tied to the buttonhole of tunic, overcoat or shirt.

Each block is supplied with a graphite pencil.

W. G. M.

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