

one-third were very much benefited, but passed out of observation before it could be determined whether they would become quite free of their trouble.

The method of treatment finally adopted was to keep the patient in bed for the first fortnight, and to give the colloidal sulphur (beginning with 1 mil. dose and rising to 2 mils. if no reaction took place) every second day for three weeks. With this were combined massage on the alternate days, and occasional hot alkaline baths. Commonly there was no general or local reaction, but in some cases the temperature rose about 2° on the day after an injection; and now and then a painful swelling developed at the site of the injection, which was, however, readily dissipated by massage.

Conclusions.—1. Intramuscular injections of colloidal sulphur are of the very greatest value in the treatment of subacute painful conditions in the muscles and joints. 2. The most satisfactory course of treatment consists of an injection administered every second day for three weeks (10 injections), combined with rest and with massage on the intervening days. 3. In the greater number of subacute cases, lasting several months, complete recovery may be expected after three to five weeks from the commencement of the treatment. 4. This method is also very helpful in lingering cases of gonorrhoeal rheumatism. 5. It does not, however, take the place of salicylate of soda in relieving the pains of acute articular rheumatism.

Edinburgh.

THE EFFECT OF VACCINIA ON THE WELL-BEING OF CHILDREN

AS JUDGED BY THEIR REACTION TO SUBSEQUENT INFECTIONS.

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THE immediate injuries and complications resulting from vaccination have been very fully discussed in the literature of the subject. It would appear that while the infectious disease vaccinia is mild, danger lies in the possible infection of the open wound, and that improved quality of vaccine virus and use of aseptic methods have greatly diminished this risk.

It has been alleged, however, that the constitutional disturbance produced by vaccination in the first year of life cannot be regarded as other than serious, since the effect of any mild infection at that tender age can gravely prejudice the child's future growth and diminish its resistance to disease. So far as I am aware, no information on this point has been published, and it has seemed that some evidence might be obtained by observing the effects of other infectious diseases in vaccinated as compared with unvaccinated children.

Accordingly a record has been kept of the presence or absence of vaccination scars on all children under 5 years admitted to the City of Glasgow Fever Hospital, Ruchill, during the years 1910 to 1913, and the accompanying tables show the incidence of death and of complications among the vaccinated and unvaccinated suffering from scarlet fever, diphtheria, measles, and whooping-cough. Tables for erysipelas, broncho-pneumonia, and enteric fever have also been prepared, but in these diseases the number of cases is so small that only total numbers are submitted. It may be stated that when doubt existed as to the presence or absence of vaccination scars friction was applied to the skin, and only those cases were regarded as vaccinated in which scar-tissue stood out pale against the hyperæmic skin.

In Table II. are given: (1) the number of children under 5 years of age admitted to hospital during the three years' period; (2) the death-rates among the vaccinated as compared with the unvaccinated in each of the diseases; and (3) a comparison is made to differentiate male and female children.

Age.—The number of cases is too small to allow of any useful information being derived from the figures relating to the different age periods. The mortality in the following age periods may be mentioned:—

Of scarlet fever cases in third year 9.4 p.c. of v. died, unv., 8.6 p.c.
„ diphtheria „ fourth „ 11.8 „ „ 15.6 „
„ measles „ second „ 17.0 „ „ 23.2 „
„ whooping-cough cases in first „ 41.9 „ „ 41.3 „

Convulsions provided a terminal symptom in the whooping-cough cases in which death was not accounted for by any of the tabulated complications.

TABLE I.—*Infectious Diseases in Children aged 0 to 5 Years in the Years 1910 to 1913.*

A. Scarlet Fever—Males.

Age periods.	Vaccinated cases.										Unvaccinated cases.															
	Cases.	Deaths.	Total number.	Pure cases.	Sequelæ and complications.						Deaths.	Total number.	Pure cases.	Sequelæ and complications.						Deaths.						
					Joints.	Kidney.	Heart.	Lung.	Septic.	Other.				Sec. cases.	Other dis.	Joints.	Kidney.	Heart.	Lung.		Septic.	Other.	Sec. cases.	Other dis.		
0-1	19	3	12	6	—	1	—	—	—	—	—	3	7	6	—	—	—	—	—	—	—	—	—	—	—	—
1-2	74	15	58	25	1	—	—	1	26	—	—	2	3	13	16	3	—	—	—	—	—	—	—	—	—	—
2-3	116	6	97	46	—	2	1	1	39	—	—	—	—	6	19	12	—	—	—	—	—	—	—	—	—	—
3-4	151	6	139	70	3	4	1	0	40	3	4	14	6	12	4	—	—	—	—	—	—	—	—	—	—	—
4-5	166	7	158	99	—	2	1	1	29	4	7	15	7	8	3	—	—	—	—	—	—	—	—	—	—	—

Scarlet Fever—Females.

0-1	17	1	12	7	—	—	—	—	5	—	—	5	3	—	—	—	—	1	—	—	—	—	—	—	—	—
1-2	57	6	44	19	—	—	—	—	13	—	4	7	—	13	8	—	—	—	3	—	—	—	—	—	—	—
2-3	111	15	95	39	3	5	—	—	24	4	2	18	12	16	9	—	—	1	—	—	—	—	—	—	—	
3-4	168	12	149	85	3	3	—	—	38	2	4	14	8	19	7	—	—	4	—	1	—	—	—	—	—	
4-5	186	7	176	102	3	—	—	—	37	3	8	17	7	10	4	—	—	1	—	—	—	—	—	—	—	

Scarlet Fever—Females.

Age periods.	Cases.	Deaths.	Total number.	Pure cases.	Joint.	Kidney.	Heart.	Lung.	Septic.	Other.	Other dis.	Deaths.
0-1	17	1	12	7	—	—	—	—	—	—	—	—
1-2	57	6	44	19	—	—	—	—	—	—	—	—
2-3	111	15	95	39	—	—	—	—	—	—	—	—
3-4	168	12	149	85	3	3	—	—	—	—	—	—
4-5	186	7	176	102	3	—	—	—	—	—	—	—

Sec. cases, Secondary cases. Other dis., Other diseases.

B. Diphtheria—Males.

Age periods.	Cases.	Deaths.	Total number.	Pure cases.	Joint.	Kidney.	Heart.	Lung.	Septic.	Other.	Other dis.	Deaths.
0-1	45	9	24	14	—	—	—	—	—	—	—	—
1-2	99	19	80	54	—	—	—	—	—	—	—	—
2-3	134	30	117	81	—	—	—	—	—	—	—	—
3-4	131	17	119	84	—	—	—	—	—	—	—	—
4-5	135	26	117	80	—	—	—	—	—	—	—	—

Diphtheria—Females.

Age periods.	Cases.	Deaths.	Total number.	Pure cases.	Joint.	Kidney.	Heart.	Lung.	Septic.	Other.	Other dis.	Deaths.
0-1	28	13	15	11	—	—	—	—	—	—	—	—
1-2	96	16	72	40	—	—	—	—	—	—	—	—
2-3	116	27	97	75	—	—	—	—	—	—	—	—
3-4	130	15	110	73	—	—	—	—	—	—	—	—
4-5	138	20	125	98	—	—	—	—	—	—	—	—

P, paralyse. L, laryngeal cases.

C. Measles—Males.

Age periods.	Cases.	Deaths.	Total number.	Pure cases.	Joint.	Kidney.	Heart.	Lung.	Septic.	Other.	Other dis.	Deaths.
0-1	50	15	25	14	—	—	—	—	—	—	—	—
1-2	111	20	78	49	—	—	—	—	—	—	—	—
2-3	118	14	97	69	—	—	—	—	—	—	—	—
3-4	96	9	80	55	—	—	—	—	—	—	—	—
4-5	83	1	72	53	—	—	—	—	—	—	—	—

Measles—Females.

Age periods.	Cases.	Deaths.	Total number.	Pure cases.	Joint.	Kidney.	Heart.	Lung.	Septic.	Other.	Other dis.	Deaths.
0-1	32	6	17	9	—	—	—	—	—	—	—	—
1-2	92	18	69	45	—	—	—	—	—	—	—	—
2-3	107	8	83	63	—	—	—	—	—	—	—	—
3-4	102	3	87	71	—	—	—	—	—	—	—	—
4-5	74	1	63	51	—	—	—	—	—	—	—	—

D. Whooping-cough—Males.

Age periods.	Cases.	Deaths.	Total number.	Pure cases.	Joint.	Kidney.	Heart.	Lung.	Septic.	Other.	Other dis.	Deaths.
0-1	53	26	9	7	—	—	—	—	—	—	—	—
1-2	72	22	47	24	—	—	—	—	—	—	—	—
2-3	75	10	57	33	—	—	—	—	—	—	—	—
3-4	83	5	71	50	—	—	—	—	—	—	—	—
4-5	48	4	40	33	—	—	—	—	—	—	—	—

Whooping-cough—Females.

Age periods.	Cases.	Deaths.	Total number.	Pure cases.	Joint.	Kidney.	Heart.	Lung.	Septic.	Other.	Other dis.	Deaths.
0-1	58	20	22	13	—	—	—	—	—	—	—	—
1-2	77	21	51	31	—	—	—	—	—	—	—	—
2-3	65	6	48	35	—	—	—	—	—	—	—	—
3-4	100	7	86	67	—	—	—	—	—	—	—	—
4-5	63	1	59	44	—	—	—	—	—	—	—	—

TABLE II.

	Total cases.				Mortality per cent.							
	—		V.		Un.		V.		Un.		V.	
Scarlet fever ...	1065	940	125	6.6	9.6	7.5	5.7	3.2	15.9			
Diphtheria ...	1053	876	177	17.6	21.5	18.6	16.5	18.2	24.7			
Measles ...	865	671	194	9.5	16.0	10.8	8.2	19.8	11.4			
Whooping-cough ...	694	490	204	13.7	27.0	14.7	12.8	31.8	21.6			
Erysipelas ...	71	44	27	11.4	44.4	—	—	—	—			
Broncho-pneumonia	33	20	13	30.0	38.5	—	—	—	—			
Enteric fever ...	23	17	6	0	16.7	—	—	—	—			

V, vaccinated. Un., unvaccinated.

Complications.—Again, if the prevalence of complications in the several diseases be considered, the following figures are obtained:—

Of scarlet fever cases	32.6	per cent. of v. developed complications.			
Of diphtheria	11.2	" " of unv. "	"	"	"
"	17.5	" " of v. "	"	"	"
Of measles	22.2	" " of unv. "	"	"	"
"	28.4	" " of v. "	"	"	"
Of whooping-cough	23.5	" " of unv. "	"	"	"
"	29.4	" " of v. "	"	"	"

And this constant predominance of complications among the unvaccinated is similarly distributed if the cases are subdivided into males and females.

Finally, if the most frequent complication in each disease is separately examined it is found that there developed—

Septic complications in scarlet fever in 26.9 p.c. of v., in 30.4 p.c. of unv.					
Diphtheritic paralysis in	6.5	"	7.3	"	"
Lung complications in measles in ...	14.5	"	18.6	"	"
" " in whooping-cough ...	19.6	"	22.5	"	"

Discussion and Conclusion.

The figures deal with 3804 cases of infectious diseases, of which 3058 were vaccinated and 746 unvaccinated, and they show repeatedly an increase in the incidence of disease complications and death among the unvaccinated. A larger number of cases will have to be examined before this point can be regarded as generally proved.

It is not contended that vaccinia increases the resistance of the body to disease in general. The results obtained in this inquiry must depend in part on the inclusion among the unvaccinated of weakly children exempted from vaccination on purely medical grounds, and this inclusion may be sufficient to explain the increased vulnerability of the unvaccinated group. On the other hand, the healthy children of conscientious objectors to vaccination appear in the unvaccinated group, and the increase in the number of these children during recent years is shown in Table III., for which I am indebted to Dr. A. K. Chalmers, medical officer of health of Glasgow.

TABLE III.—Glasgow: Statement of Number of Declarations of Conscientious Objection to Vaccination in Relation to the Births Registered.

Year.	Births.	C.O.*	Per-centage.	Year.	Births.	C.O.*	Per-centage.
1907	23,926	474	2.0	1911	21,584	3791	17.6
1908	23,743	2183	9.2	1912	21,812	4371	20.0
1909	23,002	2653	11.5	1913	28,638	6804†	23.7
1910	22,014	3231	14.7	1914	29,455	7580	25.7

* Conscientious objectors.

† Extended city.

Whatever be the explanation of the figures submitted, the fact remains that they afford no evidence that vaccinia has a prejudicial effect on a child's future well-being as judged by its response to subsequent infection. I have pleasure in acknowledging my indebtedness to Dr. John Brownlee, statistician to the Medical Research Committee, for suggesting this investigation and placing the information at my disposal.

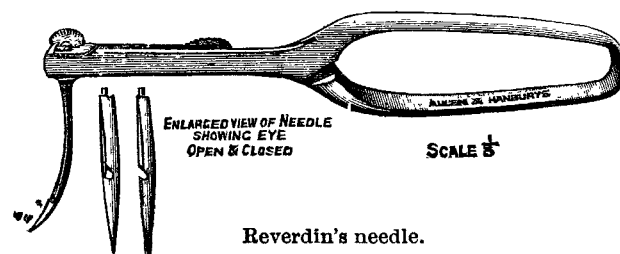
COUNTY OF ABERDEEN: REPORT OF TUBERCULOSIS MEDICAL OFFICER FOR 1916.—The report for 1916 of the tuberculosis medical officer for the county of Aberdeen states that during the year 393 cases were notified, the death-rate running almost parallel with that for the whole of Scotland. The doubts once entertained as to the advisability of the compulsory notification of tuberculosis have proved groundless. Notification has not led, as was feared, to sufferers from the disease being regarded as lepers. Occupation did not form an important factor in the incidence of the disease; heredity, defective housing, and malnutrition were found to be much more important factors. The report strongly condemns box-beds, and regards the housing problem as perhaps the most outstanding of the many difficulties associated with the eradication of tuberculosis. Among school children tuberculosis was found to be fairly prevalent, the usual site of the disease being at the root of the lungs, where the bronchial glands became affected. The report emphasises the need of after-care committees, and states that, on the whole, the expenditure under the county council scheme has been justified and has borne good fruit.

ON THE SOLE USE OF REVERDIN'S NEEDLE.

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THE subject of how to save time in surgical operations is always important, and I am therefore venturing to describe a method of general operative technique which I have employed to that end for nearly four years. It turns upon the sole use of Reverdin's needle. (Fig. 1.) The needle in question, which, it may be recalled, has an eye that can be opened and closed by means of a slide, is employed in this country, but to nothing like the same extent as in France, where it is the only needle in common use. Its great advantage is that it renders a second assistant to thread the

FIG. 1.



Reverdin's needle.

needles unnecessary, for they are threaded by the first assistant, and he and his chief are therefore in this particular self-contained.

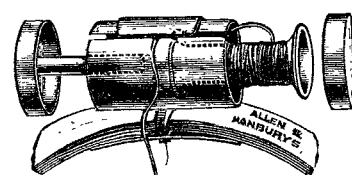
The Use of Reverdin's Needle.

For those who are not accustomed to this needle it may be remarked that its use requires a little practice. There is a tendency at first to open the eye whilst passing it through the tissues, especially if these are resistant, or to forget to close it before drawing it back, either of which mistakes causes the needle to catch in and lacerate the tissues, while the needle itself is very likely to be damaged.

Another and very important point concerns the assistant who threads it. Unlike a *notched* needle, in which a degree of tension must be kept upon the suture during the withdrawal of the needle, the assistant, once he has placed the suture in the eye and the slide is closed, must let the suture go loose. If he pulls upon it, the withdrawal of the needle is rendered jerky, and the slide that closes the eye is liable to be injured.

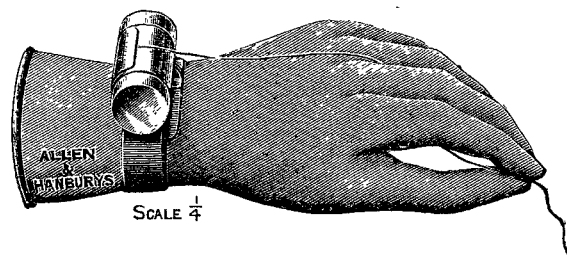
The whole instrument is a delicate one; this is its drawback. The needles, which are detachable from the holder, require to be carefully looked after. They must be taken to pieces immediately after use, cleaned, boiled, and then stored in absolute alcohol, in which they will not rust.

FIG. 2.



The author's wrist-ligature carrier.

FIG. 3.



The ligature-carrier in position.

The surgeon should have two sizes of needles, each in its separate holder, one being very fine for delicate suturing such as is required in intestinal anastomosis, and the other a coarser one for ordinary use.

Carriage of the Suture and Ligature Material.

In Paris I saw the suture material provided for in several ways. Thus, the surgeon carried in his left hand a sheaf of