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Increased incidence in Germany

In spite of my negative contribution there is one fact from which I take consolation (albeit also a negative one) and that is that we are not alone in having trouble with arsenical jaundice, for Stumpke (1942) stated last year that, just as in the war of 1914-18, there has been an increase in toxic reactions after arsphenamine injections in Germany: he suggests (a) an increase in virulence of the disease and (b) malnutrition as causes.

(My thanks are due to Major General J. A. Manifold, D.D.M.S., Scottish Command, for his permission to publish this paper.)

REFERENCES

— (1942) ibid., 27, 719.
— and Simon, F. A. (1934) J. Allergy, 6, 39.

DISCUSSION

Professor John Beattie drew attention to the work of Whipple and his co-workers on the power of sulphur-containing amino-acids to protect the liver from damage caused by the administration of chloroform and other like substances. Whipple's results indicated that when the amount of such amino-acids in the diet was increased, the liver damage was averted. Although the distribution of the cellular damage within the liver was not identical with that found in cases of jaundice described by other workers, the actual cellular changes seemed to be identical.

Whatever the aetiological factors concerned with the dysfunction, disorganization and necrosis of the liver cell in the jaundice of syphilis, the liver cell is certainly the point of attack. It seemed reasonable, therefore, to attempt to prevent the liver damage by increasing the amount of sulphur-containing amino-acids in the diet during the fourteenth and fifteenth weeks after arsenical treatment has been begun. With the cooperation of Major Marshall, a series of experiments is being carried out, with suitable controls, on the effects of administering known amounts of these substances. So far it is not possible to form an opinion, as only one group of patients has been treated. In this group, the increase in the sulphur-containing amino-acids amounted to only 20 to 25 per cent, and significant differences in the incidence or severity of the jaundice has not been noted. The second and later groups are being given greater amounts over the same and longer periods of time. When these groups are studied, it will be possible to arrive at an opinion as to the usefulness of this method of prophylactic treatment.

Professor R. A. Peters said that judging from the abstract point of view, it seemed to him that the point concerning dietary which had been made by Professor Beattie and others was the first thing to which they should direct their attention. It was likely to be nearer the mark than anything else. He also asked whether or not, in cases of arsenical jaundice, any estimations had been made of the actual arsenical content of the tissues.

Col. H. B. F. Dixon said his experiences of jaundice were in three phases. First, as a physician for many years before the present war, he had seen what was called catarrhal jaundice which occurred sporadically every year in the British Army, both at home and abroad; there were usually about 800 to 1,000 cases each year. Usually there was never more than one or two cases in the wards, and on the whole it was mild, although some cases looked like sand-fly fever at the beginning, until the jaundice appeared. The second phase was in Malta in 1938 to 1942, when he had seen about 600 cases of what is now known as infective hepatitis which was considered to be a virus infection with a long incubation period. Although there were a number of patients with syphilis receiving treatment he only saw one or two patients with jaundice after arsenical treatment, and it never struck him that the condition was due to the arsenic. About 50 per cent of the cases were febrile and it was confined to British troops. The third phase was at the Connaught Hospital which receives from the South East of England all patients with jaundice after antisyphilitic treatment and also all the patients in the area with infective hepatitis and who have not had antisyphilitic treatment. In 1942, 157 patients had been admitted of which 108 had received antisyphilitic treatment some time within the previous eighteen months; clinically there was not any difference between the two groups and the patients in each group took the same time to recover.

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Col. Dixon felt that both types of jaundice were forms of the same disease, i.e. infective hepatitis, and that in the case of those who had received antisyphilitic treatment the combination of liver damage from syphilis, plus the arsenic, had lowered the resistance of the liver to the virus of infective hepatitis. In view of the world-wide epidemic of infective hepatitis, it would appear to be unnecessary to assume that arsenic is the sole cause, or that we are dealing with a different disease.

Lt.-Col. D. J. Campbell, R.A.M.C., said that the findings in his department ran almost parallel with those which had been referred to so far in the discussion. He admitted that there was a certain conflict of opinion in his own department, as had been of cases of different natures. The main thing was that in Great Britain at any rate there did not seem to be any syphilitic population which seemed to be resistant into the second day. In his own series of cases 45 per cent occurred either during the first course of treatment or in the month's rest which followed, and 37 per cent of the cases of jaundice were associated with the second course of treatment. Some had criticized those figures and had asked why, if the jaundice was due to arsenic, it did not arise much later, in the third or fourth course, because of the cumulative effect. His own opinion was that arsenic was a precipitating factor, and in pre-war practice arsenical jaundice was found to occur more frequently perhaps during the third or fourth course, but the conditions in the Army now were such as to bring the incidence earlier in the course of the treatment. In his own experience among some 2,000 cases of syphilis the incidence of jaundice was 15 per cent. He thought that Professor Beddie had substantiated his point to a great extent that there was some factor of dietary imbalance. It was interesting to note also that whereas formerly dermatologists used to get half-a-dozen skin conditions such as old-standing eczema, etc., their work now was increased by the appearance of various sensitizations. All types of soldiers were becoming sensitive to certain articles of diet, to dust, to clothing and so on, and this sensitization might indicate certain underlying factors. It might be that the sensitization of the individual to arsenic was greatly altered owing to some dietary imbalance so that he became more sensitive to this and to other drugs.

Dr. F. O. MacCallum said that he had been interested in the problem from the aspect of trying to isolate an infective agent from some cases of hepatic jaundice. Serum had been taken on the first and second day of the jaundice and it had been inoculated into tissue cultures and developing chick embryos in the hope of isolating some agent. As in previous experiments, all attempts at animal transmission had been negative and at the present time human transmission experiments were being attempted in volunteers but there was not any answer to the question at the moment.

He had talked to a number of men who were in charge of venereal diseases centres in the Forces, and he had been impressed by the apparent scarcity of syringes. The possibility of an infective agent being transmitted from patient to patient by contaminated syringes was an old idea and he was not sure that to boil the syringe was effective. The serum which had been used in some of the icterogenic lots of yellow fever vaccine had been previously heated at 60°C. for an hour. People had had as little as 1/50th cubic centimetre of serum injected subcutaneously and they had developed jaundice; if, therefore, it was a living agent which was concerned it was certainly a very powerful and resistant one. Was it not possible that some of these syringes might have a little blood from one man who was in a subclinical state of hepatitis and that if only took 1/50th cubic centimetre to cause jaundice in some cases might not that minute amount of blood going into the other man be sufficient to produce his jaundice in anything from ten to fifteen weeks, which seemed to be the case in arsenical jaundice? Perhaps Professor Beddie had substantiated his point to a great extent that there was some factor of dietary imbalance. It was definitely the incubation period in jaundice which had occurred after the use of certain sera and vaccines. If the percentage of jaundice outbreaks after treatment with arsenphenamine was so high it would be definitely worth while to undertake a thorough investigation of this question of the syringes. Perhaps a clue would be furnished if half a given number of patients were set aside and fresh syringes for each person used every time they came to the clinic, while the other half were inoculated in the ordinary way. Then, after six months or so, it might be possible to assess the results in the two sets of cases and find out whether there was any difference. This approach might help to give a clue to the problem of arsenphenamine jaundice and also to that of so-called homologous serum jaundice with several months' incubation.

Dr. W. Kay expressed the view that by means of biochemical investigations, toxic and infective jaundice could be differentiated from one another. He had examined the bloods of 300 patients with jaundice mostly of the infective type, but a few patients had been given arsenical treatment. Half of the latter showed differences in their blood chemistry when it was compared with the bloods of those with infective jaundice. Furthermore the biochemical picture obtained was either that associated with a blockage of the common bile-duct or belonged to a class which might be termed an " indefinite type."

He showed a slide on the screen which summarized his investigations of the blood chemistry of this indefinite type. This included quantitative estimations of serum bilirubin, serum phosphatase, serum cholesterol (total, free and ester) obtained in such cases. After discussing the implications of these biochemical examinations and their relationships to a number of patients, he concluded that whereas previously it had not been possible to associate with arsenical treatment it was not always one or even the same pathological process that operated. Thus half the number seen were purely toxic whilst the others were numerically equally divided between three types (1) catarrhal jaundice, (2) infective jaundice and (3) a mixture of these two pathological conditions. In his opinion if two types of jaundice co-existed and one was much more apparent, the other might be completely
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missed. In order to avoid such an error a biochemical examination of the blood should be undertaken.

Dr. V. E. Lloyd read a letter from Dr. David Nabarro commenting on the extreme rarity of syphilitic treatment jaundice in children. Dr. Nabarro wrote that he had never seen a case in an infant and had seen only two in older children. Dr. Lloyd went on to say that this was comparable with his own experience in Guy’s Hospital. During the last fifteen years they had had only three examples of treatment jaundice in older children with congenital syphilis and one example in a child of four years with acquired syphilis. From the literature and his own experience it appeared that such jaundice in children was extremely rare and this relative insusceptibility of children was of considerable interest and importance in considering the various factors underlying the production of jaundice.

He drew attention to the occurrence of jaundice in persons treated with the arsenamines who did not have syphilis. Such instances were not common but these compounds have been widely used in the treatment of disseminated sclerosis and yet cases of jaundice were rare. In the records at Guy’s Hospital he knew of only one case of a boy aged sixteen, who had developed jaundice after arsenical therapy for disseminated sclerosis. Patients with anthrax were also treated with the arsenamines. It was his custom to advise for this infection short intensive treatment with neorsaphenamine, namely 1.5 grammes in 36 hours or 2 grammes in 48 hours. In spite of the serious nature of the anthrax infection and the intensity of the treatment he had never known jaundice to occur as a sequel.

He proceeded to show on the screen several charts illustrating the incidence of jaundice in male syphilis cases over a twenty-year period. The incidence of 3 per cent of treated cases in 1922 fell yearly to 1 per cent in 1926, rose to between 3 and 4 per cent during 1929-32 then gradually fell to under 1 per cent. Since the outbreak of the present war there has been a slight increase, the incidence last year being 2 per cent.

The incidence of jaundice amongst men under treatment in the clinic for gonorrhoea was a useful indicator of the prevalence of infective jaundice but there had been very few of these cases and all six had occurred during the peak period of syphilitic treatment jaundice in 1929-32. Another chart was exhibited showing the relation of the incidence of syphilitic treatment jaundice to the total weight of neorsaphenamine administered. The largest number of cases occurred in the fourth to the fifth month, by which time the patient had received 5-6 grammes of the drug. The chart illustrated the relative freedom from jaundice after the first nine months of treatment. When the liver escaped any damage during the first few months of treatment, jaundice rarely developed later and after a total of 20 or more grammes of the drug had been reached further treatment very rarely produced jaundice.

Major G. A. Hodgson, R.A.M.C., said that if arsenic was the single factor in such cases under discussion it might be assumed that there would be a subclinical state of jaundice, which would gradually increase to clinical jaundice with the amount of arsenic given. Therefore he started serial estimations of the amount of serum bilirubin in cases under treatment. Some fifty cases were observed, in some instances for five to six months, the remainder for shorter periods, 145 estimations in all being performed. Fourteen of the fifty patients became jaundiced, and it was shown that a patient could have an absolutely normal bilirubin level in his serum (up to 0.3 milligrams per cent) and seven days later he would exhibit clinical jaundice with a high bilirubin content. Of those who did not become jaundiced, it was found that a certain number between the 5-10 gramme level of arsenic showed a serum bilirubin above the normal, that is subclinical jaundice, and that, although arsenic was continued, the bilirubin level later fell to normal; but this occurred in only a certain number of cases. His conclusions were that the onset of jaundice could occur in a period as short as a week, suggesting an infective origin. Further, in a certain number of persons there could be a rise of bilirubin up to a condition of subclinical jaundice, but that this level could return to normal although treatment with arsenic was continued. This suggested that the two factors of arsenic plus infection might be required for the production of jaundice. The method of infection might well be through syringes, and in view of the shortage of syringes, and the large number of cases to treat, sterilization could not be carried out adequately.

Lieut. L. K. Wills, R.A.M.C., said that from a dermatological viewpoint it was known that herpes zoster occurred during arsenical treatment for syphilis. He had had under his care only two cases of herpes zoster in jaundiced patients who had had about 6 grammes of arsenic. He suggested that the jaundice might be only of an infective nature. It was known that herpes zoster was a virus disease and he desired to stress the probabilities of the infective nature of jaundice after arsenical treatment.

Major Milner, R.A.M.C., said that from a clinical point of view he considered that true arsenical jaundice was rare. Most of the cases of jaundice seen were instances of biotropism in which a latent infection by the virus of epidemic infective hepatitis had been stimulated into activity by the arsenamines. These drugs had a specific action on the treponema as well as a non-specific action on the tissues generally and on any antigens held in a state of latency by the tissues. Other instances of biotropism shown by arsenamine treatment were outbreaks of the virus diseases of herpes, feverish hives, but almost uniform non-irritating rash, not uncommonly seen during treatment. The fact that children so seldom developed jaundice may be a corroboration of the non-specific activity of the drug on latent antigens. Children had not yet had time to render many antigens latent in their tissues. The reactivity of the individual depended on his allergic threshold, in some cases this would be high, in others low. The former would require a larger or more prolonged
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dosage with the drug, the latter less. The allergic threshold of every individual was different. The differences in the date of onset of the complication could be ascribed to this rather than to the weight of the drug. He had noticed that all the graver complications of arsphenamine therapy were preceded at some time by a missed injection which he considered produced a direct sensitization to the arsphenamine. True arsenical jaundice was a sensitization phenomenon and aplastic anaemia, encephalitis haemorrhagica or exfoliative dermatitis commonly appeared later. Patients sensitized from any cause were known to have depleted glycogen reserves and increased permeability of all membranes, together with a lowered prototoxic function of the liver. In his experience, fatal jaundice was more common among patients with latent syphilis who were treated with arsphenamines. The patient with latent syphilis may be regarded as one whose tissue defences are largely engaged in keeping his disease under control—that is to say, a highly sensitized individual with occasional non-specific stimulation of the liver, e.g., by the injection of a dose of arsphenamine to the usual extent. It seemed to him that the approach to the complication of jaundice should be attention to the soil, rather than to reduction of weight or frequency of dosage of the drug. The patient's attendance was usually irregular. If this irregularity was increased by irregularity of injections during a course, then complications would be more frequent. It was known that irregularity of treatment promoted complications of all kinds. The soil might be protected by ensuring adequate protein, fat, sugar and vitamins in the food and attention to obvious toxic factors in the body.

Col. L. W. Harrison said that a few facts, mainly epidemiological, might be of interest. They were based on an inquiry which he made some months ago at the treatment centres of the country. He had asked, in anticipation of future developments, how many cases of jaundice they had had in twelve months and how many cases of syphilis they had treated with arsenical remedies. The result showed that in about 20,000 cases which had been so treated, the incidence of jaundice worked out at about one case per twenty-eight cases of syphilis. This figure was considerably lower than in London. There were quite a number of individual civilian clinics in different areas. In London, for example, the ratio was about 1:40. On the other hand, in Norfolk there had not been any cases of jaundice at all in spite of a number of patients with treated syphilis. He thought that there was also a difference in periods. One director of a centre gave the ratios of jaundice cases to the numbers of injections of arsphenamine compounds from 1937 to 1942. In 1937 the ratio was 1:600; in 1938 it was 1:800; in 1939, 1:500; in 1940, 1:300; in 1941, 1:670; and in 1942, 1:163.

Nobody had mentioned that jaundice practically never happened in private cases. He could recall only one; it was in the experience of a colleague and was in the case of a jockey who was getting his weight down. He also reminded the meeting that this was not the first war in which there had been epidemics of jaundice. They had occurred in every war in which he or any friends and relations had been concerned, although severe jaundice in arsphenamine-treated cases had been seen during the war of 1914-18 in only a few military hospitals. He and others had caused the Medical Research Committee to institute an inquiry into the aetiology. Until recently he had thought that the liver damage must be due, apart from the factor in which he was a firm believer, to the benzene radicle in the arsphenamine preparation, but this idea had been upset by the occurrence of jaundice in patients treated with Mapharside. In fact, if one had regard to the relative strength of the therapeutic action of neoarsphenamine and Mapharside (he calculated that the latter, weight for weight, was only about four times as active therapeutically as the former) he had not been able to find any material difference between the incidence of jaundice in the cases treated with the two types of remedy respectively. He was now strongly inclined to think that when cases were the therapeutically effective arsenic in the preparation employed. He reminded the audience that jaundice after injections of tryparsamide was very rare in spite of the very large doses employed.

As regards herpes, he could confirm that large doses of an arsphenamine preparation would often precipitate an attack. He based his statement on his experience of very large doses (as much as 1:2 grammes) of Silver Salvarsan which he had given at one period to a number of patients with general paresis. In the course of his work he had sometimes been tempted to think that factory workers in an atmosphere heavily charged with metals might be less tolerant of arsphenamine treatment than were others. He had in mind a place where the syphilologists had found it impossible to give as a routine larger doses than 0.45 gramme of neoarsphenamine.

Wing-Cdr. G. L. M. McElligott, R.A.F., said that he could confirm what Dr. Nabarro and Dr. Lloyd had said about the incidence of post-arsphenamine jaundice in children. During the last fifteen years he had never seen a case of post-arsphenamine jaundice in a child in spite of the fact that he had treated all his cases with the far more toxic sulpharsphenamine. He thought that there were two pointers towards the solution of the problem as to why some sections of the community seemed to get post-arsphenamine jaundice more than others. One was the relative absence of this condition among women. Why was it that the incidence of post-arsphenamine jaundice was so low in women? The answer possibly might be that women as a general rule had a slower metabolic rate than men, they had also a good deal more subcutaneous fat, and that this was to some extent an index of the condition of their liver cells. Moreover, they did not usually take the same amount of violent exercise as men—in fact, they went slow and fed fairly well. Another pointer was the relatively low incidence in the Royal Air Force. The men were extremely well fed—perhaps the best fed set of men in the country—and they did not have to take the extreme amount of exercise that fell to the lot of the average soldier.

An important precaution, particularly in Service clinics, and, to a lesser extent, in civilian ones, was that the doctor should satisfy himself that the patient had had a good meal before he came for
treatment. The Forces patients often came from a distance, they did not bother to bring with them the unconsumed portion of their ration, and they went without their lunch or subsisted on a bun.

As Dr. Lloyd had shown them, the time of onset of arsenical jaundice was usually twelve to fifteen weeks after the first injection, at which time about 6 grammes had been given. It would be interesting whether or not jaundice ever occurred in patients who had had two or three injections, or even only one injection, and then had defaulted, and had come back again for further injections after a few weeks.

Major Fawcett-Corbett said that in the charts shown by Dr. Lloyd it was significant that the high peaks were in 1920, just after the war of 1914-18, in 1930, a time of maximum unemployment, and again in the present war. It was worth while to look at the matter from the dietary point of view and in particular to consider the diet of the clinic patient as compared with that of the private patient and of the officer class. The man who came to the clinic in pre-war times was probably short of milk, eggs and cheese, whereas the well-to-do civilian and members of the officer class had these foodstuffs in plenty. Under present rationing conditions, however, certain supplies were assured for all, and the officer class was also rationed. On balance he thought that there was an indication that a dietetic factor underlay the problem.

Professor John Beattie took up the point mentioned by Col. Harrison as to metal workers developing jaundice. A recent paper by Griffiths and his colleagues had dealt with the effects of various metals on the production of liver damage. It might be of some interest to those who wished to pursue Col. Harrison's suggestion. Whipple had shown that the sulphur content of the foetal and neo-natal liver was considerably higher than later in life. The child in utero might, therefore, be less susceptible to liver damage by factors which produced it in the mother.

The President, Col. Osmond, said that although there had been recently a very marked increase of jaundice in the Army the treatment of syphilis had remained the same since the beginning of the present war. Secondly, jaundice did not seem to depend on the amount of arsenic. It did not follow that because more arsenic was given in a single dose that, therefore, the incidence of jaundice would be greater. In fact, looking through the cases notified to him, the commonest time for the jaundice to arise seemed to be after about fourteen weeks from the beginning of treatment and the amount of arsenic given was from 6 to 7 grammes.

Major Marshall, in reply, said that he used the same syringes for arsenical preparations as were used for a number of other purposes in different diseases, and in the latter he had not seen any jaundice develop. Major Johnson, however, had told him that he had seen three or four cases occur within seventy-two hours after giving T.A.B. intravenously with the same syringes as he used for giving arsenic.

As for jaundice in congenitally syphilitic children, it had been agreed by everybody that the incidence was very small, but it was a fact that infective hepatitis was relatively common in children under the age of seven. He had seen herpes zoster in conjunction with jaundice and had also seen arsenical dermatitis with jaundice in about three cases. On the subject of private patients, he agreed entirely with what had been said and he could add with regard to present conditions that the incidence of jaundice in officers, as far as he could make out, was between 90 and 100 per cent of a recent small series who had undergone arsenical treatment. As to defaulters and the question whether or not their condition was an infective hepatitis or a relapse of syphilis in the liver, if there was doubt about a case it would probably be wise to try the effect of arsenic.

Dr. J. McMichael said that it was hoped to study in more detail, with the cooperation of Major Marshall, the question of syphils affecting the liver. Major Marshall had given him the opportunity of carrying out a biopsy in a florid secondary syphilis and the liver was perfectly normal.

If any side had been taken in this discussion the controversy seemed to lie between the question of diet and that of infection. Professor Beattie had put up a good case in favour of the dietetic factor, but there were one or two difficulties which, it appeared to him, Professor Beattie had not quite solved. He said that arsenic itself was probably not responsible and yet he made a plea later on for the provision of SH radicals in order to detoxify the arsenic. Stokes continued anti-syphilitic treatment throughout the course of the jaundice in a large number of cases without any deleterious effect on the course of the jaundice, and it seemed, therefore, that arsenic might be almost completely excluded as a toxic agent. All the experimental work on the influence of amino-acids in protecting the liver had been based on a chemically produced liver damage. The lesions which he had shown the meeting seemed to him to differ completely from the chemically produced liver damage in experimental animals. It was not easy to treat human beings according to the results of animal experimentation on the influence of diet in protecting the liver from chemical agents.

There was also the other point that minute traces of serum or blood might remain about the syringes or needles. In favour of that hypothesis there was the fact that the incubation period of syphilitic jaundice in patients with the arsenic serum inoculations were about the same. It might be that longer intervals between injections to private patients ensured the death of the causal agent in the syringes between injections, or perhaps it was a question of more efficient sterilization. But there was still the curious sex incidence to be accounted for.

Major T. E. Anderson, in reply, said that his personal impression was that they were not dealing with an infective as opposed to a dietetic condition but with a combination of conditions. Colonel Harrison's point that these conditions arose during war-time and in times of depression might be
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met by the suggestion that dietetic factors tended to protect the liver from attacks of virus or other infections. Were they not "tilted over" by arsenicals, whereas under peace-time conditions with a properly balanced diet, jaundice was practically an unknown thing?

THE COMPULSORY TREATMENT OF VENEREAL DISEASES UNDER REGULATION 33B

By N. P. SHANNON, of Gray's Inn, Barrister-at-Law

(In the March issue of the Journal we published the first section of this commentary. This second and concluding section deals with the enforcement of the Regulation.)

(6) If a patient found by a special practitioner to be suffering from a venereal disease gives to him information as to a person from whom the patient suspects that the disease was contracted, such information shall be deemed—

(a) for the purposes of paragraph (2) of Regulation 82 of these Regulations, to have been furnished for the purpose of this Regulation;

(b) for the purposes of the law relating to defamation, to have been communicated in pursuance of a statutory duty;

(c) for the purposes of Regulation 84 of these Regulations, to have been obtained by the practitioner by virtue of this Regulation.

Notes to paragraph (6)

Object of the paragraph.—It will be observed that this paragraph applies only where a patient is found by a special practitioner to be suffering from a venereal disease, and gives to him information as to a person from whom he suspects that the disease was contracted. In regard to such information the object of the paragraph is threefold: (1) to prevent false statements, (2) to protect the person giving it in good faith from being exposed to the risk of an action for libel or slander, (3) to prevent the unauthorized disclosure of such information by the special practitioner. The paragraph applies to all patients in the circumstances stated, not merely to patients who attend voluntarily or subject to compulsion, but it applies only to communications made to a special practitioner by the patient. It does not apply to communications made by a patient to a doctor, e.g. his own family doctor or a general practitioner whom he consults, unless that doctor happens to be a special practitioner as defined in paragraph (7).

The general effect of the paragraph is intended to be stated in the official notes to Form 1 of the prescribed forms, to which the special practitioner is directed to draw the patient’s attention before seeking detailed information as to the source of infection. In the following notes the position is gone into in rather more detail.

False statements.—Regulation 82 (2) of the Defence (General) Regulations, 1939, which is applied to information thus given, provides that if, in furnishing any information for the purposes of any of the Defence (General) Regulations any person makes any statement which he knows to be false in a material particular, or recklessly makes any statement which is false in a material particular, he is guilty of an offence against that Regulation. The maximum penalties incurred on summary conviction are three months’ imprisonment, or a fine of £100, or both imprisonment and fine (see Regulation 92 of the Defence (General) Regulations, 1939).

Defamation.—In the House of Commons debate on December 15th, 1942, Dr. Russell Thomas asked the Minister of Health the following question. "Suppose information has been given and the man or woman is found to be innocent. What remedy has such person against the informer? In law, I believe, the person would have remedies. A woman could take action for damages for slander