I

THE FOLK-LORE OF VENEREAL DISEASE

By J. D. ROLLESTON, M.A., M.D., F.R.C.P., F.S.A.

INTRODUCTION

The scarcity of the literature on the folk-lore of venereal disease is to be attributed partly to the fact that most medical practitioners know little and care less about folk-lore, and partly to the fact that folk- lorists are rarely medical practitioners and shrink from dealing with what they regard as an unsavoury and repulsive subject. No mention of venereal disease, for example, is to be found in W. G. Black's "Folk-Medicine" or Sir James Frazer's "Golden Bough," to mention the two principal British works by lay writers in which much valuable medical folk-lore is to be found, while of the two chief works in this country by medical authors Pettigrew's "Superstitions connected with the History and Practice of Medicine and Surgery" published two years before the term "folk-lore" was invented by William John Thoms, does not mention venereal disease, and the comparatively recent work by Dan McKenzie on "The Infancy of Medicine" has only two brief references to the subject. (88, 119)

The only important treatise on medical folk-lore in which the subject is adequately discussed is that published by O. v. Hovorka and A. Kronfeld in 1909 entitled "Vergleichende Volksmedizin," to which I shall have to refer many times in the course of this paper, as I have in my previous articles on medical folk-lore (1939, 1940, 1941, 1942).

In the present paper I shall deal first with venereal disease generally and then with syphilis and gonorrhoea separately. Owing to the comparatively recent establishment of their autonomy there does not appear to be any folk-lore connected with chancroid or the fourth, fifth and sixth venereal diseases.

VENEREAL DISEASES GENERALLY

The folk-lore of venereal diseases generally may be discussed under the headings of nomenclature, ætiology, prophylaxis and treatment.
Nomenclature. As illustrating the popular interest in the subject of venereal disease generally it may be noted that Bloch and Loewenstein have collected about forty English synonyms for prostitutes, while Farmer and Henley (s.v. "Tart") give more than 400 synonyms for these principal purveyors of venereal disease.

Aetiology. An opinion widely spread among the laity in China is that venereal disease is due to excessive sexual intercourse which is also regarded as the cause of a host of other diseases, especially in the newly married, and old women are always considered as experts in their treatment. It is also widely believed that intercourse with a woman who is menstruating or has a vaginal discharge of any kind is an important factor in the causation of venereal disease (Hovorka & Kronfeld 2, 151).

Prophylaxis. The simplest method for combating venereal diseases is the avoidance of extraconjugal intercourse, which is characterised by Hovorka and Kronfeld (150) as ideal but impossible to realise in the present state of society, as it would necessitate much earlier marriages than is possible and would require a moral sense which does not exist. On the other hand, these writers deprecate sexual congress before complete physical and mental maturity and regard the widespread belief that abstinence in young people is injurious as an entirely false and dangerous view.

The same writers quote several ancient works showing that in classical antiquity, at least during the Roman Empire, the use of animal bladders for protecting the female partner from the results of coitus was well known among the people.

Treatment.—The cure of a disease by its supposed transfer not only to other persons but also to animals, plants and even inanimate objects is illustrated in the folk-lore treatment of several diseases such as whooping cough, epilepsy, warts, boils, pulmonary tuberculosis and the acute exanthemata as I have illustrated elsewhere (1939, 1940, 1941, 1942). Whereas, however, in the case of these diseases the transfer is purely imaginary, in the case of venereal disease, especially gonorrhoea, it may only too frequently actually take place without of course having any therapeutic effect on the primary case. The person to whom the disease is transferred is preferably a young virgin of either sex, much less frequently an
THE FOLK-LORE OF VENEREAL DISEASES

adult. This superstition, which dates back for several centuries, is world wide and will be discussed again in dealing with syphilis and gonorrhoea.

SYphilis

Nomenclature.—In his celebrated "Treatise of the Venereal Disease" Astruc remarks that "the French Disease has obtained various names even among the vulgar so that for some Time it was a Dispute among the European Physicians by what proper Name they ought to distinguish it."

The term "syphilis" was first introduced by Fracastor in his poem "De Morbo Gallico" in 1521, but as Jeanselme (155 n.) points out, did not receive general recognition, and during the whole of the seventeenth and eighteenth centuries only about half a dozen writers employed it, of whom the best known are Daniel Turner and Swediaur. Although, however, no scientific term was given to the disease on its first appearance in Europe, a host of new names were introduced by the laity, and the rapidity with which they were introduced is shown by the fact that in the course of five years (1495–1500) the disease obtained more than 400 (Bloch 61). The commonest were those indicating that the malady had originated in France, such as Morbus gallicus, the French disease, French Pox, Peste de Bordeaux, Mal de Nyort, Mal de Carrefour de Poitiers, and Gorre de Rouen. The French retaliated by using the words Mal de Naples and Morbus neapolitanus, while the Portuguese term indicated that the disease had arisen in Spain, the German term suggested that it came from Poland, and the Polish name that it originated in Germany.

A remarkable fact mentioned by Bloch (217), which forms one of the strongest arguments in favour of the American origin of syphilis is that not only in Haiti and Central America but also amongst the aborigines of South America syphilis had definite names, as was found by the Spanish and French missionaries to those countries.

The tendency to give a dangerous disease a euphemistic title, which, as I have shown elsewhere (1937), is also illustrated in the case of smallpox, is noted by Dohi, who states that syphilis was called the "peach blossom eruption" on its first appearance in China.

The interest which the laity, especially among the lower
ranks of society, took in syphilis is shown by the large number of synonyms in different languages, as can be seen from Farmer and Henley's work, such as "ladies' fever," "bad or foul disease or disorder," "Barnwell ague," "Covent Garden ague," "Coal or winter coals," "the crinkums," "the French gout," "the garden gout," "the marbles," "the French marbles" and "Venus's curse," while the following slang terms have been applied to persons infected with syphilis—"Frenchified," "pockified," "burnt," "pox'd," "queer," "hot," and a syphilitic woman has been called a "fireship." The laity have also christened the disease by the names of patron saints whose aid is invoked by the sufferers, viz. St. Fiacre, St. Job, St. Regina, St. Mén, St. Maevius and St. Roche (Bloch 79 et seq.)

Aetiology.—The sudden appearance of syphilis in Europe at the end of the fifteenth century gave rise to many popular theories as to its origin. Of these the most widespread was that which Bloch (15) calls the theological origin, the disease being attributed to a divine source and regarded as a punishment for unchastity. This view which was expressed by many contemporary German, Spanish and Italian writers, persisted for a long period and was pictorially represented in 1496 by a woodcut prefixed to Sebastian Brandt's broadside entitled "De pestilentiali scorra sive mala de Franzos," in which the Christ Child is depicted casting fiery darts at two men, a woman and a soldier which caused foul ulcers on their bodies (Abraham 10). The pious Astruc seems to have accepted this view, as is shown by the following passage from his work (1): "That the Venereal disease was sent into the World by the Dispensation of Providence either to restrain, as with a bridle, the unruly passions of a sensual appetite or as a scourge to correct the Gratification of these is an opinion highly probable." This popular view, however, was combated by the scientific physicians of the day, especially Brassavola, who declared that there was no reason to suppose that unchastity was more prevalent than in an earlier age, while the existence of syphilis of the innocent was the most striking refutation of the theological origin of syphilis (Bloch 17). It is hardly necessary to add that this theological doctrine is still far from extinct.

Apart from any idea of punishment the ancient
THE FOLK-LORE OF VENEREAL DISEASES

Mexicans regarded the sun god named Nanauatzin, who was also the deity presiding over dance, song and play, as the originator of the disease, and held festivals in his honour (Bloch 208 et seq.). In the Quiche tribe of Guatemala there was also a god named Tepeu who corresponded to the Mexican sun god (Id. 216).

At the present day, according to Hovorka and Kronfeld (2, 160), the cause of syphilis in Tunis, where it is called "the great disease" or "the predominant disease," is held to be an evil spirit named Tahiar, protection against whom can be obtained by a man making a rough image of his wife and writing on it his own name, and those of his mother and Tahiar. It must then be kept for some time near a fire and buried in an old churchyard.

Next in importance to the theological view as to the origin of syphilis, according to Bloch (21), is the opinion once widely prevalent that the disease was due to sexual congress between a man and an animal—a view which presupposed that animals also suffered from syphilis and transferred the disease to man. This view was overthrown by the fact that until the successful inoculation of a monkey by Roux and Metchnikoff in 1903 no animal had ever contracted the disease. Other folklore views as to the origin of syphilis were that it is due to intercourse with a woman who was menstruating or had a vaginal discharge of any kind, to a chill or the influence of the evil eye (Hovorka and Kronfeld 2, 158).

Transfer of Syphilis.—According to Jeanselme (232), the transfer of the disease by sexual intercourse with a virgin of either sex was first mentioned in 1676 by Walter Harris, who stated that in his time it was commonly believed that syphilis could be cured by coitus with a healthy young girl. This superstition is still present especially in country districts. As a rule the offender is an adult male and the victim a young girl, but occasionally instances occur of an adult woman, especially a nurse, infecting a small boy.

In her paper on acquired venereal infection in children Dr. Flora Pollack distinguished "the infectionist," who wants a virgin, and therefore attacks children by preference, the assault being always genital and sometimes rectal as well, from "the sadist" who seeks an abnormal sexual gratification, and attacks young and old, male and female indiscriminately. In Pollack's experience the
double infection of syphilis either as a primary chancre or as secondary lesions and gonorrhoea frequently occurs.

Prophylaxis.—Folk-lore methods of prophylaxis against syphilis are scanty. The condom, the most effective safeguard against venereal disease, short of abstinence, and generally ascribed to the celebrated anatomist and physician Fallopius, cannot be regarded as such. The following devices are the only prophylactic methods used in different countries and ages which I have been able to discover.

According to the Rev. John Ward, the well-known seventeenth century diarist, quoted by D’Arcy Power, writes: “The way to prevent ye pox is by syringing, as ye Duke of Buckingham and some other madde fellows doe, or else taking a horse and riding immediately after I have heard is the most undoubted way.” In Highland Ruthenia, where syphilis is very prevalent, the sexual organs are washed before coitus with the person’s own urine and a decoction of stone fern (*Asplenium ruta muraria*) (Hovorka & Kronfeld 2, 158). According to the same writers (2, 160) the prophylaxis of syphilis in the Indian Archipelago is closely connected with the social, political and religious life of the Indian natives. The Malay population of Java, Borneo and Sumatra are Mohammedans and therefore familiar with circumcision and depilation. The latter, however, is not universally practised, but is confined to dancers and prostitutes, and is assigned some value by Hovorka and Kronfeld, as are also polishing the skin with pumice stone and smearing the body with oil. I have already alluded to the prophylactic method employed by the Arabs in Tunis.

Treatment.—Jeanselme (186) remarks that when syphilis first appeared in Europe at the end of the fifteenth century the medical profession, who had never seen any disease resembling it, were at their wits’ end and treated their patients with an extraordinary variety of remedies, most of which were unsuccessful. The natural consequence was that a large number of unqualified persons undertook the treatment of the disease making extravagant claims to success, and many folk-lore remedies developed, some of which have persisted, especially in the East of Europe and in other backward races, down to the present day.

In addition to intercourse with a virgin the chief folk-
THE FOLK-LORE OF VENEREAL DISEASES

lore cures for syphilis are animal remedies, plant remedies, mineral remedies, invocation of patron saints and miscellaneous remedies.

Animal Remedies.—According to Hovorka & Kronfeld (2, 157) folk-lore remedies for syphilis have been supplied by the following animals—antelope, badger, bear, buffalo, crow, earthworm, elephant, frog, lizard, horse, maggot, pig, sheep and viper. The antelope, bear, buffalo and elephant were chosen for their large size, the patient being made to sit in the stomach of the animal until the contents were cold. The heart and bile of the polar bear are used by the Ostyaks of Western Siberia. The Hamran tribe in the Eastern Sudan treated the patient by shutting him up with the carcase of a pig or sheep in a hut from which he was not released until he had eaten all its flesh and fat. The marrow of badgers and bears, earthworms fried in oil or macerated in wine, frogs ground up alive, lizard’s meat and vipers’ fat are mentioned by Cumston. In Algeria cantharides beetles are placed in a bottle which is buried in the summer in horse manure for 40 days, during which they decompose leaving maggots which are crushed into a powder and applied to the sores on the nose and face. (Hilton-Simpson 81).

Plant Remedies.—The number of folk-lore plant remedies for syphilis, usually in the form of decoctions, is legion, their multiplicity being strong evidence of their inefficiency. The following alphabetical list makes no pretension to completion—agrimony eupatoria (Ruthenia), atriplex halimus L (Algeria), bromus (Slovakia), burdock (Britanny), butaca frondosa (India), camarum palustre (Russia), carduus benedictus (Britain), chenopodium (Bulgaria), cicutia virosa (Siberia), dandelion (Slovakia), erongo (England), globularia alypum (Algeria) guiacum (Balkans), heart’s ease (Britain), hound’s tongue (Britain), lepidium sativum (Algeria), pserocarrus indicus (Malaya), sarsaparilla (Turkey), sassafras (Algeria), smilax china (Malaya), soap wort (Britain), solanum dulcamara (Ruthenia), and tuja occidentalis (Bulgaria). Of these guiacum, sassafras and sarsaparilla had the greatest reputation, though it was only short lived. Mention should also be made of theriaca, the celebrated compound containing over seventy ingredients of which the chief was viper’s flesh.
Mineral remedies.—In striking contrast with plant remedies very few inorganic metals have been employed in the folk-lore treatment of syphilis, the chief being mercury, copper, iron, sulphur, and arsenic in the form of orpiment. Mercury was used from the first appearance of the disease not only by regular practitioners but also by the laity, whose reckless use led to its falling into discreditation. According to Hovorka & Kronfeld (2, 163), it was specially used in the treatment of syphilis in China, combined with iron. Calomel was used internally, and in rare cases metallic mercury was mixed with the juice of various plants (Id. 163). In Turkey copper sulphate is applied to the primary sore (Id. 162) and among the Wanjamwesi syphilitic ulcers are cured by sprinkling them with copper filings (Id. 160). Arsenic in the form of its trisulphide was used as a local application (Cumston). Sulphur is employed in the following manner by the Somalis and Afars—the patient’s body is rubbed with sulphur mixed with melted butter and then exposed to the sun’s rays until the signs of the disease disappear (Hovorka & Kronfeld 2, 162).

Local treatment.—In Croatia the chancre is washed with the patient’s urine and powdered with the ashes of a burning cigar (Id. 160); the last method is also frequently employed in this country. In South Hungary copper sulphate is applied to syphilitic ulcers on the genitals. In Turkey tobacco juice is a common form of local treatment (Id. 160). In British East India among the villagers where a connection between the primary lesion and coitus does not appear to be realised, local treatment consists in the application of an ointment compound of catechu, corrosive sublimate, copper sulphate and butter (Sutherland). An ointment for the “great pox” (203) consisting of alum, verdigris, honey and vinegar is recommended by Moncrief (203) who says “Anoint the place therewith and it will both dry and heal.”

Patron Saints.—In dealing with the nomenclature of syphilis I alluded to the patron saints whose aid was invoked by sufferers from the disease shortly after its appearance in Europe at the end of the fifteenth and beginning of the sixteenth century. At the present time in Morocco, where according to Dr. Françoise Legey most diseases are supposed to be cured by patron saints and
THE FOLK-LORE OF VENEREAL DISEASES

syphilis is extremely prevalent, the aid of the following patron saints is sought, Sidi Mancour, Sidi Yahia the Qartoubi a native of Cordova, Sidi Abd el Aziz of Marrakech, and Moulay Yakoub of Fez, the son of Sidi Mancour. At Sidi Mancour’s shrine at Marrakech there is a large basin full of holy water in which syphilitics bathe after violent sweating produced by running. Sidi Yahia Qartoubi’s shrine, which is also at Marrakech, contains a tomb beneath which are two small ponds in which there are numerous tortoises, which are supposed by the power of the saint to diagnose and cure the cases of syphilis. The patient plunges naked into the pond and throws bread crumbs to the tortoises. If the animals nibble at the patient’s legs as well as at the bread crumbs, this indicates that he is syphilitic and that the tortoises will carry off the disease. But if they keep away, the affection is not syphilitic, and the patient must seek help elsewhere. Sidi Abd el Aziz, whose shrine is also at Marrakech, was a doctor during life and treated syphilis by dipping his patients in enormous earthenware basins covered with magical inscriptions. According to Legey, these basins were buried in his grave and are supposed to protect Marrakech from syphilis. Application of oil from a sacred lamp at the shrine is supposed to render the patient non-contagious. At Moulay Jacoub’s shrine near Fez the cure of syphilis is supposed to be effected by hot water from sulphur springs.

Miscellaneous Cures.—These include sweating, fumigation, and local application of drugs or other substances. Among the Ruthenians the patient is treated as if he had contracted a chill and laid on a stove, covered with a closely fitting fur coat, so as to make him sweat profusely and is forbidden any acid or salted food (Hovorka and Kronfeld 2, 158). In Russia the peasants and uneducated classes who are terrified by a doctor prefer to call in an old woman whose invariable treatment is making the patient sweat and giving him a decoction of herbs to drink (Id. 159). Another form of heat cure is that employed by the Sudanese, who bury the patient in sand heated by the noonday sun (Id. 162).

Fumigation with metallic mercury or cinnabar combined or not with various plants is a popular form of treatment. In Algeria, for example, three forms of fumigation for syphilis are employed, viz. exposure of the
patient to (1) the steam of boiling roots of *Globularia alypum*, (2) the smoke of the ashes of *Atriplez halimus* mixed with water, or (3) the smoke of burning cinnabar (Hilton-Simpson 80). Mercurial fumigations are also employed by the Huzulians, as the Ruthenian highlanders are called (Hovorka and Kronfeld 2, 158). In Turkey fumigation is carried out with cinnabar or metallic mercury combined with sublimate and the powdered root of henna (Id. 160).

Postscript.—Reference may here be made to the popular belief concerning syphilis mentioned by the late Dan McKenzie in a paper on "Euthanasia in the Folk Medicine of Britain." When he was in general practice in the Lowlands of Scotland in the nineties of the last century he learnt that medical men were supposed to destroy their patients suffering from hydrophobia or syphilis by smothering them between two feather beds. In the case of hydrophobia the euthanasia appeared to be justified by its invariably fatal issue and the patient's distress, while in the case of syphilis the patient was destroyed for the protection of the public.

**GONORRHEA**

*Nomenclature.*—According to the New English Dictionary the term "clap," the popular synonym for gonorrhoea now obsolete in polite use, is of uncertain origin. I have pointed out elsewhere (1934 and 1937) that owing to the confusion between syphilis and gonorrhoea which lasted for about 250 years, the words "clap" and "pox" were used indifferently for syphilis and gonorrhoea, just as the term "variolae" was applied to measles and "maysilles" to small-pox.

*Etiology.*—Numerous folk-lore beliefs as to the causation of gonorrhoea have been held in different countries, as is shown in particular by Hovorka & Kronfeld (2, 151). In Styria and Ruthenia, for example, it is generally attributed to micturating against the wind or in church, beer drinking, especially just before coitus, and holding the breath during the act. In South Russia and Galicia protracted retention of urine is regarded as responsible. In Bavaria interruption of coitus or a fright during the act is incriminated. In British East India according to Sutherland the cause of gonorrhoea is the excessive consumption of highly spiced food, coitus with a mens-
THE FOLK-LORE OF VENEREAL DISEASES

truating woman and micturating in a place infected by a person with gonorrhœa. Coitus with a menstruating woman is also regarded as responsible on Lake Garda (Hovorka & Kronfeld 2, 152). The Bataks of Sumatra have no idea of infection and ascribe the disease to a stone in the bladder (Id. 2, 153).

Transfer of gonorrhœa.—As in the case of syphilis the superstition still survives in many parts of the world not only in the east of Europe, where it appears to be most prevalent, but also in this country, the United States, and elsewhere, that gonorrhœa can be cured by intercourse with a young virgin of either sex. According to Hovorka & Kronfeld (2, 151) the practice became prevalent as the result of a work published in 1507 entitled “Luis venereae perfectissimus tractatus ex ore Herculis Saxoniae Patavini.” Though female children are more frequently affected, boys occasionally contract gonorrhœa as the result of attacks by women suffering from the disease. According to Wolbarst (1910) in his paper on gonococcal urethritis, boys between the ages of 4 and 10 years are most frequently affected. Pollack remarks that it is not only the children of the slums and of ignorant parents but any girl baby in the city is in danger of infection. In British East India transfer of the disease by coitus with a very black woman or a she donkey takes the place of a child (Sutherland), and in South Russia a pregnant woman (Hovorka & Kronfeld 2, 152). According to Krafft-Ebing bestiality is also frequently practised in Persia under the delusion that it cures gonorrhœa.

Prophylaxis.—Covering the penis with snow immediately after an impure connection is mentioned without further detail by Hovorka & Kronfeld (2, 151).

Treatment.—The folk-lore treatment of gonorrhœa apart from transfer of the disease may be considered under the headings of plant remedies, coprotherapy, local remedies and miscellaneous methods.

Plant remedies.—The following alphabetical list of folk-lore plant remedies for gonorrhœa, most of which are mentioned by Hovorka & Kronfeld (152 et seq.), show that they are as numerous as those for syphilis—althœa officinalis, arache hypogœa, banana, butea frondosœ, cardamoms, carica papua, cissampelos Pareira, cochlearia officinalis, delphinium Balansœ, ficus bengalensis, hemp seed, jasmine, juncus maritimus, lepidum sativum,
linseed, mulera baccatus, nettle, occimum gratissimum, parietaia diffusa, parsley, pimpinella, pinus silvestris, pumpkin, rosemarinus officinalis, spoorwort, terminalis chebula, thyme, thuja occidentalis and tribulus terrestris. In the great majority of cases these remedies were taken internally in the form of decoctions or infusions. In only a small minority they were applied locally. In Algeria, for example, according to Hilton-Simpson (82) dried and powdered stinging nettle mixed with powdered jasmine is sprinkled over the penis and scrotum at night, and in Croatia a favourite method is to push the penis into a hole in a pumpkin which has been warmed by the fire (Hovorka & Kronfeld 2, 152).

**Coprotherapy.**—Two examples of coprotherapy are mentioned by Hovorka & Kronfeld (2, 157–8). The first which occurs in Croatia consists in drinking beer which has lain all night in cow dung, while the second is the administration of the dung of silk-worms by the Japanese.

**Miscellaneous remedies** include administration of chalk internally in half a litre of brandy several times a day, drinking of his urine by the patient in the morning on an empty stomach (Id. 2, 151), irrigation of the urethra with a solution of calcium chloride or milk (Sutherland) and insertion of the wood of the Jieo tree into the urethra by the Somalis (Hovorka & Kronfeld 2, 151). In the Olonetz government of Russia cotton wool wrapped round a wire and smeared with an ointment consisting of fat and blue vitriol is introduced into the urethra several times a day. In the Palatinate the penis is laid on the corner of a table and struck with the fist with the result that profuse haemorrhage takes place followed by transient improvement (Id. 151).

**REFERENCES**

ABRAHAM, J. J. (1935) "Fracastor: Syphilis or the French Disease."
ASTRUC J. (1754) "A Treatise of Venereal Diseases."
BLOCH, I. (1901) "Ursprung der Syphilis."
BLOCH, I., und LOEWENSTEIN, G. (1925) "Die Prostitution," 2, Erste Hälfte.
CULPEPER, N. (1938) "English Physician and Complete Herbal."
DOHI, K. (1923) "Beiträge zu der Geschichte der Syphilis."
HILTON-SIMPSON, H. W. (1922) "Arab medicine and surgery."
PATHOLOGICAL EVIDENCE OF HÆMATURIA

HUME, E. H. (1940) "The Chinese way in Medicine."
JEANSELME, E. (1931) "Système de la Syphilis," 1,
LEGEY, F. (1935) "The Folk-Lore of Morocco."
MONCRIEF, T. (1916) "The Poor Man’s Physician."
RORIE, D. (1914) "County Folk-Lore," 7, 405; (1926) 18, 75, 261.

II
PATHOLOGICAL EVIDENCE AS TO THE CAUSATION OF HÆMATURIA FOLLOWING SULPHAPYRIDINE THERAPY*

By MAJOR N. T. WHITEHEAD, M.C., Royal Army Medical Corps.

The recent death of a patient under treatment with sulphapyridine has provided an opportunity for investigating the excretion of this drug from the body and the cause of the hæmaturia which occasionally occurs during such treatment.

The case under review was that of a man aged 30 who was admitted to hospital with a non-specific urethritis. He was given an intensive course of sulphapyridine but after receiving 17 grams in forty hours he complained of pain in the loins and the treatment was stopped. His output of urine began to diminish and the flow eventually ceased altogether. The urine contained blood and needle-shaped crystals of acetyl sulphapyridine. On the day of the patient’s death the concentration of urea in the blood rose to 300 mgm. per 100 c.c.

I propose to give only a brief summary of the post-

* Reprinted by permission of the author and of the Editor of the Journal of the Royal Army Medical Corps.

I3