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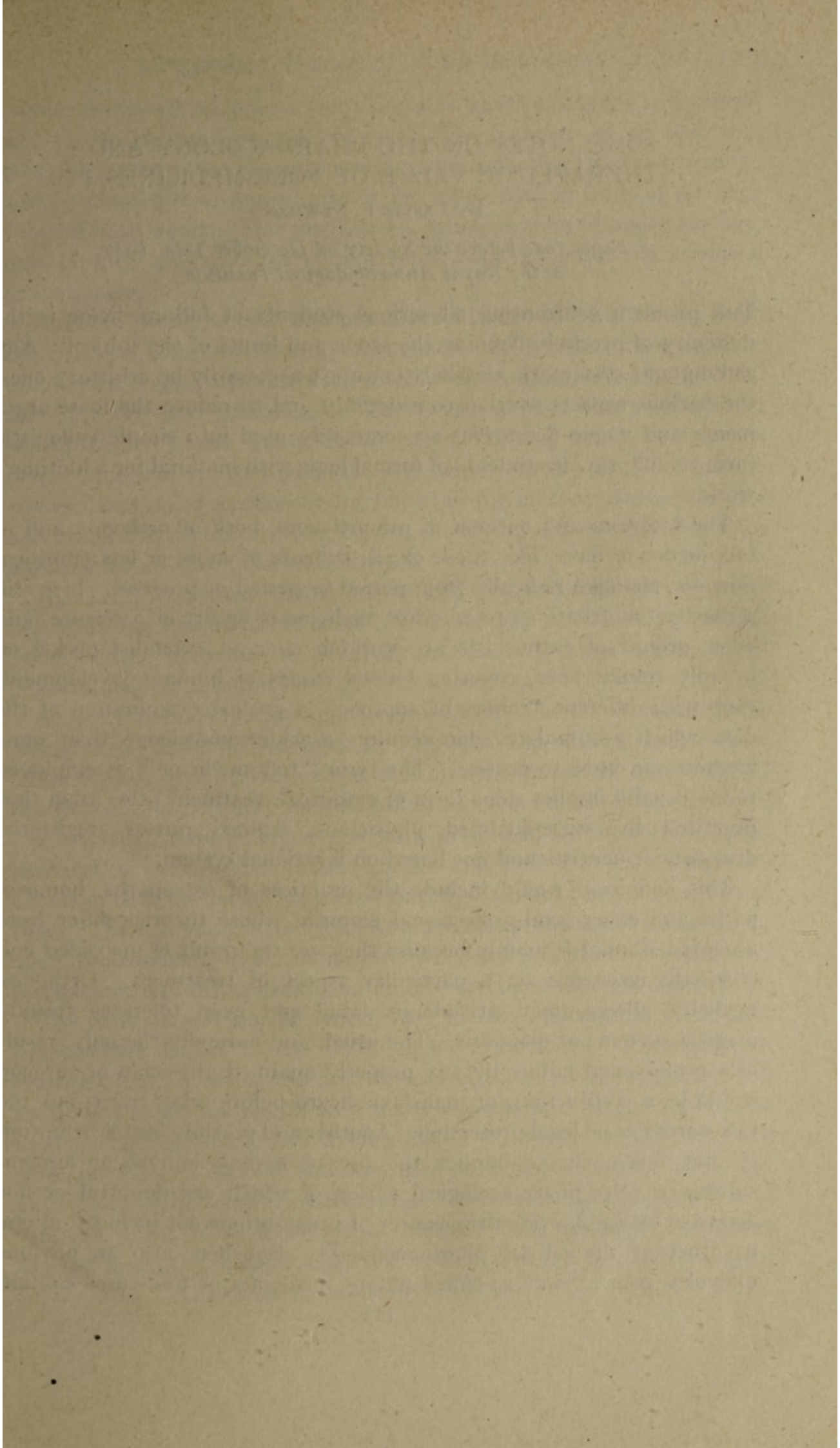
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Some Notes on the Pharmacology
and Therapeutic Value of
Folk-Medicines, I

BY LESLIE F. NEWMAN





SOME NOTES ON THE PHARMACOLOGY AND THERAPEUTIC VALUE OF FOLK-MEDICINES, I

BY LESLIE F. NEWMAN

*A paper read before the Society on December 12th, 1947,
at the Royal Anthropological Institute*

THE problem confronting all serious students of folk-medicine is the difficulty of precisely defining the scope and limits of the subject. Any attempts at systematic classification must necessarily be arbitrary ones, the various aspects overlap considerably and to reduce the loose arguments and vague definitions so commonly used into simple syllogistic form would provide students of formal logic with material for a lifetime's work.

The interests and outlook of practitioners, both of orthodox and of folk-medicine have, like those of all students of more or less empirical sciences, changed radically from period to period of progress. It is still a matter for debate as to whether medicine is an art or a science, and when groups of enthusiasts are working over an extended period on broadly similar lines, covering several stages of human development, each with different avenues of approach, a critical examination of the data which accumulate soon requires a wider knowledge than most workers can hope to possess. The term "folk-medicine" as employed today usually implies some form of empirical treatment other than that practised by state-qualified physicians, trained nurses, registered druggists or dentists and not based on a rational system.

This definition would include the practices of osteopaths, homoeopaths and other semi-professional empirics whose theories differ from accepted standards mainly because they are the result of one-sided and obstinate insistence on a particular aspect of treatment. Orthodox medicine allows great latitude in detail and even tolerates frankly magical systems of diagnosis. The usual, and normally the only, result of a professional failure by any properly qualified physician or surgeon would be a civil action for malpraxis heard before a lay court, but the folk-curer has no legal protection. Another and possibly better definition is that folk-medicine implies the use of herbal, animal or mineral substances, the pharmacological action of which are doubtful or not accepted by regular practitioners, or of preparations not included in one or other of the official pharmacopoeias. But here also an obvious difficulty rises. Some so-called patent medicines or folk-cures contain

regular medicinal drugs or active principles whose efficacy is well-known and tacitly accepted by medical men. The inclusion of old and well tried folk-cures in the pharmacopoeia was usually due to some physician having adopted it with good results, from the stock-in-trade of a village witch or wise woman. This instituted a double system of pharmacology, that is with similar drugs employed by both orthodox and unofficial practitioners.

Thus the young mother who purchases a bottle of "Aq. Anethi Dest. B.P." is not using a folk-cure, although she *is* doing so if an amateur pharmacist digests some cremocarps of Dill in a saucepan to make "dill tea" for the baby's flatulence. The bilious person who purchased or was prescribed "Succ. Tarax. B.P." (this, of course, before 1932, as the preparation was omitted from the 6th edition of the British Pharmacopoeia) was using an official cure, but if he dug up some dandelion roots and drank the expressed juice, he was employing a common folk-cure—a simple bitter—for a disordered liver.

The term empirical treatment is also inadmissible as a general definition for folk-medicine as it would include the administration of some official preparations used in orthodox practice whose exact pharmacological action is not fully understood.

An old folk-remedy may appear (in carefully controlled doses) in the official lists and still be used in folk-medicine, but a herbal cure administered with or without a charm, incantation or any magical process will not normally be included in any regular list of standardised preparations. Also, many of the cures prescribed by the local simpler, herbalist or wise-women have definite and well marked therapeutic effects so that the term "empirical remedy" cannot fairly be applied to them. The real point is that folk-medicine means the use of a remedy by a non-professionally qualified practitioner even if its action has been found satisfactory and it has been adopted into orthodox medical practice.

The issue or adoption of official lists for the information of medical practitioners began in the early days of medicine. A well-known treatise,¹ written during the first century of the Christian era, described about 600 medicinal plants with many mineral and animal substances used as medicines. It had a long life—1500 years—as the standard work on *Materia Medica* and was used in this country in Latin and native manuscripts with commentaries. It is valuable even today as it contains a list of equivalents in different languages and so affords assistance in the identification of unknown early medicinal plants.

¹ *The Materia Medica of Dioscorides.*

Later on, a number of books on pharmacy and therapeutics were issued under the titles of *Compendium*, *Dispensatorium* or *Antidotarium*, and were intended for the guidance of doctors and apothecaries. In 1498 the comprehensive works of Nicholas Praepositus² and other authors were used as the first official Pharmacopoeia. The volume prepared by de Bosco,³ and published in 1406, had a great vogue in Germany, but after 1546 the *Dispensatorium* of Valerius Cordus became generally accepted as the standard work on the subject. The *London Pharmacopoeia* was first published in 1618 for use in this country. It contained a number of remedies that had originated in, but almost disappeared from, the realm of folk-medicine and it may be said to afford a connecting link between official and folk preparations. Soon after it was issued, a real distinction between official and folk-medicine began, but it was not until the ancillary sciences of chemistry, physiology and pharmacology were established on definite scientific lines that physicians began to look for curative substances suggested by, or based on, clinical observations. Chemical constitution, careful posology, analogy and logical deductions were supported or disproved by the help of analysis, experiments on animals, improved observation methods, and careful records of results. Today, therapeutics have reached a high standard of accuracy, and the clinician can sometimes construct, theoretically, a compound likely to be efficient in the cure of a specific disease with a reasonable probability that the organic chemist will be able to synthesize it in the laboratory. It is true that this method may fail in practice as the new compound when prepared may possess undesirable properties or be unexpectedly toxic and many promising lines of treatment have proved abortive on account of this unforeseeable chance—some of the recently investigated organic salts of gold are examples.

It is probably most satisfactory for the student of folk-medicine to select one aspect of the subject and examine it in the light of modern knowledge, disregarding the question of motives and the reasoning that led to its development *or* to treat the gradual evolution of folk-medicine historically without considering the actual therapeutic value or the essential nature of the remedies under consideration. Both methods are valuable; both have their special advantages and disadvantages. The second line of approach has been the favourite one, and the many excellent papers published both in the lay and in the medical press are evidence of the satisfactory results of this method.

² *Antidotarium Parvum*.

³ *Luminare Majus*, Jacobus Manlius de Bosco.

The properties of many of the drugs in official pharmacopoeias were originally discovered by amateur pharmacologists and adopted by regular physicians. Both groups were only a little less ignorant than the herbalist, witch or wise-woman. Only a few drugs were consciously sought for, either because the plants containing them possessed some obvious characteristic such as acrid juices or mucilaginous extracts or by some other reasoned process of thought, even if that reason was only a belief in the doctrine of signatures or of astrology.

The *British Pharmacopoeia* contains a restricted list of drugs but the "Extra" volume includes a very large number of recently introduced medicinal substances all carefully standardised by analysis or by biological assay and the international agreement of 1930 is precise. The British Pharmaceutical Codex is published by the authority of the Pharmaceutical Society.

The amateur dispenser, herbalist or country wise-woman has always laboured under the great handicap of non-standardisation of dosage. Even the measures used in compounding country mixtures were irregular—such terms as a "boy's handful", a "good quantity", "a little bunch," "a half-pennyworth" and other indefinite units did not make for exactitude in prescribing medicine. This did not matter very much with non-toxic plants but with highly-poisonous preparations there was a possibility of dangerous doses being given.

A point not always appreciated by pharmacologists is the great variation in the relative toxicity of some native plants from year to year or even from season to season. *Digitalis purpurea* (foxglove), a medicinal plant with a long history,⁴ contains a number of extremely toxic glucosides, and the amount in the leaves varies according to habitat—its relative toxicity appears to depend on the amounts of moisture or sunshine. The proportion of each individual glucoside present is also very variable and they are difficult to separate even by modern chemical methods. The term glucoside is used in organic chemistry to describe members of a large group of naturally occurring bodies combined with a sugar—usually glucose—and includes many important medicinal substances such as tannins, jalap, digitalin, allyl-iso-thiocyanate and many of the colouring pigments of flowers. Linseed and other plants may contain a cyanogenetic glucoside (in the case of linseed it is phaseolunatin) which is hydrolysed by the ferments present. Amygdalin found in bitter almonds is hydrolysed by the enzyme emulsin to give glucose, hydrocyanic acid and benzaldehyde. *Digitalis Tinctura*

⁴ *The Physicians of Myddvai* referred to it.

B.P. is an alcoholic extract of the leaves and is much used in medicine as it has a powerful action on the heart and kidney. A watery infusion of this plant, sometimes used in folk-medicine, is said to have been much more toxic than the official tincture considered weight for weight of the extracts and there can be little doubt that serious effects sometimes followed the use of heavy doses of foxglove. It has been stated that a countrywoman cured a University Professor of dropsy with a mixture of simples and that an observant medical man purchased the secret of the prescription with a large bribe and tested each constituent in turn. This valuable piece of research added a most potent and useful group of drugs to the pharmacopoeia.⁵ Curiously enough, digitalin, the most important constituent of foxglove, is related chemically to bufotalein, the toxic principle of toad venom, and toad extract was used in folk-medicine for several purposes including heart trouble.

A few years ago an investigation was carried out to decide the probability of farm stock being poisoned by young plants of *Conium maculatum* (hemlock). The plant is a biennial and during the first year's growth has little of the strong mousey smell which usually prevents the fully grown plant being eaten by farm animals. It was found that one or two ounces of the fresh leaves killed rabbits in less than an hour, while material taken from the same field in the following year was ineffective up to half-pound doses—the maximum amount that test animals could be induced to eat in a day. This meant that the toxicity of *Conium* in the second year's test was *less* than twenty-five per cent of that of the plants eaten during the previous season. In both cases young leaves of first year's growth were analysed and administered to the test animals.⁶

In the leading case of the State of Athens versus Socrates it will be remembered that Socrates, when the executioner handed him the cup, asked if he could pour out a libation to the gods. The officer refused permission, saying that the dosage was so carefully regulated that the loss of a libation from the cup might not leave a lethal dose.⁷ The Greek plant *may* have been *Cicuta virosa* and not *Conium maculatum*—both are toxic and both occur in Greece—but competent authorities accept the statement that the true hemlock was used. In all probability the roots were employed, not the shoot or fruits, and in plants of the same

⁵ See Withering, *An Account of the Foxglove*.

⁶ *Veterinary Record*, 31, viii, 1929.

⁷ Plato, several references; Binz, *The Death of Socrates*. The symptoms exhibited by Socrates were those of *Conium* poisoning.

species the percentage amount of the toxic principle tends to increase in a warmer climate; this is one reason why many European medicinal plants are grown commercially in more southern countries than Britain. Some of our native plants contain extremely toxic substances but in such small amount that considerable latitude in the dosage can be allowed if the dried plant is administered (infusion is the usual method). Plants containing cyanogenetic glucosides—substances giving rise to prussic acid—can sometimes be eaten safely as the poisonous body does not seem to develop at all stages of growth. The same is true for the toxalbumins and castor oil residue is an example. The amount of ricin present seems to vary considerably and is a very toxic substance.

Tinctures—that is, alcoholic extracts of plant material—were rarely used in folk-medicine owing to the difficulty of preparation. Ale, beer or white wine were frequently employed as vehicles for suspensions or as solvents, but, in the main, most of the liquid medicines of the countryside simpler were simple watery infusions, decoctions or suspensions and, no doubt, varied greatly from official preparations of the same substance as the constituents would be taken up in varying proportions with different menstrua and treatment of the marc during the process of preparation. The glucosides are sometimes taken up in water and West African natives use a watery infusion of *Strophanthin*, both as a medicine and as a poison. The poisoner always had an easier task than the amateur physician, even in recent times, but more especially in the past. The only thing that mattered to the former was to prepare a tasteless draught or powder in which the active principle would be present in excess of the lower limit of a lethal dose but within the possibility of illicit administration, as excessive quantities might have caused symptoms other than the normal ones. Massive doses of crude preparations may induce vomiting and so defeat their purpose. The common British plants *Daphne Mezereum* and *D. Laureola* (the spurge laurels) are still, as in the past, in great repute as a folk-cure for neoplasms, malignant as well as benign, although deep-seated carcinomata and sarcomata are the usual types of growths for which these two species are administered. They were also used as cures for toothache and as cathartics. Surface cancers tend to break down and were often grouped with the commonly occurring simple dermatological troubles once known as morpheus, blotches, blains, or with other disfiguring lesions. Oil of wintergreen—methyl salicylate extracted from *Gaultheria procumbens*—which has always enjoyed a great reputation in folk-medicine for successful treatment of rheumatic pains no doubt owed its long continued use to the

ease with which the crude ester could be obtained. The same reason probably accounts for the popularity of preparations of the oily liquid obtained from native *Hypericum spp.* (various species known as S. John's wort). The "oil" cells of this genus are plainly visible as clear droplike spots to the unaided eye and the extract sets into a firm resinous film which, beyond all doubt, is valuable as a dressing for chilblains or broken skin and especially for aged or bedridden invalids who may suffer from bedsores, or senile gangrene.

There are many traps for the unwary in folk-medicine, most of them depending on an inability to appreciate possible reasons for conditions rising from obscure causes or due to some unexpected result of a mixture of constituents. Thus the rapidly decreasing use of *Aspidium* (*Dryopteris*) *felix mas* (the male fern) as a folk-remedy is almost certainly due to unexpected effects of the extract. It is well known to medical men that any toxic effects from medicinal doses of male fern are much increased if any other oil is present so that castor oil should not be given as an aperient when male fern is administered but salines—such as Epsom salts—used instead. The old-time practitioner of folk-medicine usually assigned any unforeseen trouble that might follow his treatment to a sudden aggravation of the disease. Even regular physicians, however much they despised the herbalist, were unwilling to intervene and the coroners' courts were mainly confined to obvious homicide, suicide or cases of treasure trove. But today the coroner, the toxicological expert and the pathologist are freely invoked, especially when parents or relations are moved by spite, natural affection, or a longing for what is often considered the most desirable of all things—publicity.

Another vermifuge much used in folk medicine is obtained from *Artemisia spp.* (*A. maritima* is the usual source); it is known as "wormseed", and the active principle is the glucoside santonin. Its toxicity is high and two grains have proved fatal to a child of five and a half years. Santonin sometimes causes a peculiar condition of colour-blindness which may persist for a considerable time and may be serious for those people whose work demands visual acuity.⁸ Loss of speech has been recorded even when medicinal doses have been prescribed, and that symptom has been observed as the result of, at least, one case of folk-cure where an old woman had administered wormseed to her grandson for ascites. Several deaths have resulted from careless or large doses and the remedy is not without its dangers as an irritant.

The itch to "do something" during the past two war periods led to

⁸ Taylor's *Principles and Practice of Medical Jurisprudence*.

the revival of some odd forms of folk-medicine. One of those well-known female busybodies formed a committee (with herself as chairman) in a rural parish not far from London to collect " medicinal plants " during the war of 1914-1918. Among the raw materials selected were the rhizomes of *Agropyron repens* (Couch grass), and as the local farmers were only too glad to see this undesirable weed removed from their land, a large heap of bags packed with decaying rhizomes was soon collected. It fell to the writer's lot to inform the committee that couch grass had been much used in folk-medicine as a favourite remedy for gonorrhoea and other genito-urinary troubles. A hundred years ago it was officially employed for venereal disease, as a vermifuge, and for stone. It was considered quite useful, but for many years the plant has been superseded by more modern and effective treatment for all these diseases. It is a matter of considerable interest why cures for venereal diseases occur relatively infrequently in folk-medicine. Few writers in the past referred to them.⁹ It is, however, only fair to add that *Agropyron repens* apparently was officially asked for but the rhizomes were probably required for some purpose other than the one suggested.

Down to the end of the eighteenth century little or no enquiry was made into deaths, even when the patients had been treated by local wise-women, white witches, and other irregular practitioners, but now any death where the regular doctor has not been called in is likely to lead to suspicion and the herbalist has sometimes appeared in court on a serious charge. In most cases unorthodox remedies, patent medicines or folk-cures are mainly used for trivial complaints and, normally, death is unlikely. Still idiosyncrasy of the individual and unknown dosage of toxic plant preparations may lead to trouble. About one per cent of patients cannot tolerate iodine and many other cases occur in ordinary medical practice. Under the law any non-medically qualified person in charge of a fatal case can be tried for manslaughter and judges are apt to be severe on parents who employ unorthodox cures or charms in the treatment of diseases. The persons who believe in the efficacy of prayer and refuse medical aid of any sort belong to a different type. Their unreasoning attitude is expressed as the age-old dilemma so often used as an example in text-books of elementary logic :

" If the deceased was destined to recover, then medical aid was unnecessary, and if he was not destined to recover then medical aid was

⁹ See *A Rich Storehouse or Treasure for the Diseased* (a number of cures written by " A. T." or " G. W.") and other semi-medical works. Possibly the female folk-doctor avoided these cases, although even today there is a reluctance to seek medical advice from medical practitioners.

futile ; But he was either destined to recover or not destined to recover ; Therefore medical aid was either unnecessary or it was futile." This attitude is not accepted in law as a valid defence from the Peculiar People or others of the same type of mentality.¹⁰

A number of folk-cures, at one time widely employed by country people, were found to possess definite therapeutic action and have been exploited by patent medicine vendors with success. Analysis is not always easy, as a concentrate may contain several constituents the chemical reactions of which are unknown and, if the preparation is carefully made up so that no recognisable cellular tissues remain, the pharmacologist has little data available for identification by morphological characteristics. If any special elements of the tissues or of storage material remain unchanged a microscopical examination will assist the chemist in his identification.¹¹ The starches, for instance, are often characteristic in appearance and thousands of different grains from special plants have been figured and described.

Muscarine, the active principle in the scarlet fly agaric—*Amanita muscaria*—is extremely toxic and, as the name implies, was once prepared by housewives as a home-made paste for fly destruction. It was, in fact, the first substance to be regularly used in flypapers before the nineteenth century arsenical ones were employed. The latter were not favoured as in several trials for murder by arsenic poisoning the defence claimed that arsenic found in the accused woman's possession was obtained from flypapers and used as a cosmetic. Yet the stories that large portions of the pileus of this fungus were eaten by North European and Asiatic races as an intoxicant appears to be based on sound observation. Muscarine is largely excreted, unaltered, in the urine, so that by drinking that secretion a second intoxication can be induced. The procedure may be repeated several times so that a lengthy debauch can be obtained with one or two fungi. Poor persons are said to have used the urine of their more fortunate neighbours.¹² Muscarine is one of the drugs that cause hallucinations of time and space, like the American mescal or the Asiatic hashish. Its constitution is not fully established but it is probably a basic-hydroxy-aldehyde. The suggested constitution and synthesis put forward by Kögl is not generally accepted.

¹⁰ Wolf, *Textbook of Logic*.

¹¹ See *Secret Remedies*, vols. i and ii, published by British Medical Association, 1909 and 1912 ; also see Winton, *Microscopy of Vegetable Foods* ; Clayton, *Compendium of Microscopy*.

¹² See Cooke, *The Seven Sisters of Sleep* ; Lanesdorff on the natives of Kamschatka, etc.

Neurine (vinyl-trimethyl-ammonium-hydroxide) is, like muscarine, closely related to choline and is possibly one of the ptomaines of putrefaction, but although the use of decayed flesh in folk-medicine is known, it has not been possible to establish the reason for its administration or of any toxic effects from its use. Fresh blood of various animals was much used in folk-cures and charms. The fresh blood of the common eel is *said* to be intensely poisonous owing to the presence of a toxalbumin—the most toxic group of organic bodies known.¹³ Yet live eels were often given to sluggish horses before the parade at fairs so that their movements in the stomach might induce activity in the show-ring and no ill effects are recorded. Fishermen and cooks handle fresh eels with apparent impunity. The belief, widely spread in America and said to exist in the Shetlands, that dust from old coffins is a toxic and actively used constituent in folk-medicines has attracted considerable notice but the experimental work carried out on that substance by American biochemists seems to be slight and their conclusions quite indefinite. No answer is known to the question: Can ptomaines survive the general decomposition of the body? But an alcoholic extract of coffin dust has proved fatal to a rabbit.¹⁴ Buckland's illness after his search for Hunter's coffin in the vaults of S. Martin-in-the-Fields was probably due to toxic gases from the broken coffins but dust *may* have played some part. Many similar cases are known when church vaults were opened. Arsenical compounds have always been used in folk-medicine both as drugs and as poisons. Arsenic pastes are largely used in the East as depilatories, apparently with little risk, although they can be absorbed by inunction. The element was known to the ancients and was isolated by Albertus Magnus about 1250, from which date it has been largely employed in medicine. As arsenic has many technical uses it can always be obtained in spite of the futile Poisons Act, which only makes its open sale difficult, and (except as arsine or in organic combination) it is not very toxic compared with some of the organic poisons; two grains is the minimum lethal dose, and the toxalbumins may be 14,000 more poisonous weight for weight. Arsenical compounds are also used extensively in folk-medicine for improving the complexion and stamina and as a cure for skin diseases. They are given to horses by their grooms to improve their condition or cause salivation and some workmen who handle arsenic regularly, eat small quantities to improve

¹³ Pennavaria, *Il Farmacista Italiano*, xii, 1888.

¹⁴ Taylor's *Principles and Practice of Medical Jurisprudence*, vol. ii. See F. Buckland, *Curiosities of Natural History*, Series iv.

their "wind". Sheep are dipped twice yearly in arsenical baths to destroy parasites; compounds of this element are used to spray fruit trees, and also as weed killers, so that it is well-known and can be easily obtained for use in locally made folk-cures.

Antimony can claim an equal place with arsenic in folk-cures both for internal and external application. Antimony preparations were used as cosmetics¹⁵ and the *Pocula emetica* or antimonial cups of the middle ages are well known in museums.¹⁶ The cups were filled overnight with the crude acid wine of the period and the contents drunk in the morning. Enough antimony was taken up to cause vomiting and diarrhoea.

The clinical effects of many herbal folk-medicines are unknown, and the active constituents (if any) have not been identified but it is possible that some useful additions to the list of official drugs will be made when our native flora is more fully investigated. A widely used folk-remedy for malaria or ague which, up to the last century, was common in the Eastern counties as well as in other parts of Great Britain,¹⁷ was a pill made of spider web or of the spiders themselves. It might be imagined that this treatment was quite useless as a remedy and was merely a good example of the survival of folk beliefs with no reasonable basis. Another form of treatment was to carry a living spider in a shell until it died¹⁸—an example of homoeopathic magic. Yet in 1882 when Oliva isolated the principle arachnidin from spider webs, it proved an excellent febrifuge, and similar pills had saved many lives in Madras in 1867.¹⁹

A great disappointment recently in this practical branch of folk-lore were the clinical tests of a concentrate obtained from raspberry leaves. A tea made from dried leaves is extensively used by pregnant women and recommended by many midwives to facilitate an easy delivery.²⁰ A very well-known obstetrician carried out a series of tests at one of the larger hospitals on this preparation and obtained results that fully justified further and more extensive experiment. Unfortunately he named his concentrate "Fragarine", which implied that *Fragaria vesca*, *folia* (strawberry leaves) were used.²¹ This trivial slip was seized upon

¹⁵ The Bible, 2 Kings, ix, 30, and Ezekiel, xxiii, 40.

¹⁶ Antimonyall Cupps, St. Clair Thomson, *Proceedings Royal Society of Medicine*, vol. xix, No. 9.

¹⁷ Nuttall Cobett and Strangeways-Pigg, *Journal of Hygiene*, vol. 1.

¹⁸ Paracelsus. See Longfellow (*Evangeline*) for mention of this remedy.

¹⁹ McKenzie, *Infancy of Medicine*, 1927.

²⁰ Newman and Newman, *Folklore*, vol. 50, 1939.

²¹ *British Medical Journal*, 13th Sept., 1941; Sir Beckworth Whitehouse's article "Fragarine"; see also Bourne and Burn, *Journal of Obstetrics and Gynaecology of the British Empire*, 1927; and Burn and Withell, *Lancet*, 1941.

by captious critics and the whole investigation appears to have been dropped. Clinical work should surely be judged on its merits and not on a mere question of misplaced nomenclature. Several preparations of plant tissues, originally used in folk medicine, have been placed on the market with the approval of the medical profession on no better evidence than that available in the case of raspberry leaves.

The above instances afford evidence of a large and little-explored field of research in folk-medicine. There has been a certain amount of guess work but the chemical investigations which are necessary would entail a large staff of workers with competent folklorists and botanists in charge to provide the required material and make out a *prima facie* case for expenditure of time and trouble in each example examined. Medical co-operation and assistance with the important details of clinical tests would also be required.

One curious feature of the interest taken in popular science during the sixteenth and seventeenth centuries was the large number of pamphlets on folk-medicine written during that period. These were mainly produced by enthusiasts in support of the alleged medicinal value of one or other herbal simple. As examples, Mr. Morley and Sir J. Colbatch may be quoted. Morley's tract²² was a panegyric on the use of *Verbena officinalis*—the common Vervain—a native plant which has always been much used in folk-medicine and as a prophylactic against witch charms. The author quoted some sixty cases and cures in detail but probably a number of them were diseases other than scrofula. He recommended the herb for internal medication and also as an ointment but his main advice to patients was to suspend a piece of vervain root round the neck next to the skin. This rather blatant advocacy of magical practice brought his work into ridicule but the brochure was evidently popular as the writer's own copy is the 16th edition (1777). Colbatch²³ used *Viscum album*—mistletoe—as a cure for epilepsy and convulsive distempers²⁴ and quotes a number of early authors in support of his thesis, among them Bauhin, Scalinger, Zwelfer, Boyle and Pliny. Colbatch was a medical man and his prescriptions were very interesting; he used "Pioneys" largely with the mistletoe, either as the syrup or as

²² Morley. *An essay on the nature and cure of scrofulous disorders commonly called the King's evil*, etc. Morley lived at Halstead in Essex and even today his tract is much read in that county although scrofula is rare.

²³ Sir John Colbatch, *A Dissertation concerning Mistletoe*, 5th edition, 1730; see also Pechey's *Herbal* for Pioney Preparations.

²⁴ See also Rolleston, *Folklore of Epilepsy; Medical Press and Circular*, 3rd October, 1943.

pioney-water or flowers of red pioney. Recently the pharmacological action of mistletoe has been investigated and the active principle—guipsine—is much used in France to relieve hypertension. Mistletoe is a very old and popular folk-cure and was grouped with the "Herbs of S. John". These were: *Hypericum spp.* (S. John's wort), *Hieracium Pilosella* (hawkweed), *Verbena officinalis* (vervain), *Sedum Telephium* (orpine), *Verbascum spp.* (mullein) and *Artemisia spp.* (wormwood).²⁵ Recently an old folk-remedy, *Fagopyrum* (buckwheat), has been shown to possess an active principle known as rutin which was first extracted, as a chemical curiosity, from *Nicotiana* (tobacco) and *Ruta graveolens* (*rue*). It is said to protect against risk of capillary fragility—that is, the rupture of small blood vessels, especially those in the retina.²⁶ This is a common lesion in elderly cases of hypertension.

The Rev. John K'eogh published in 1739 a work on zoological folk-medicine.²⁷ It gives a comprehensive list of animals used in folk-medicine in Ireland, and states the organs of each with the diseases for which they were given. It is a book of little merit except for workers on the comparative side of the subject of animal remedies. K'eogh recommends snails for tubercule and chest troubles; fox lungs for the same purpose; swallows for epilepsy and some other cures widely used all over Europe and in general repute, but the bulk of the examples given appear to be unknown outside Ireland. A number of scatological medicines are included, but K'eogh's zoological knowledge seems to have been negligible and his medicine no more advanced than that of the mediæval Celtic or Saxon physicians. Bee stings as a cure for sciatica are widely used and are described by McKenzie as owing their efficacy to formic acid,²⁸ but actually the secretion contains a complex nitrogenous base.²⁹

²⁵ See McKenzie, *Infancy of Medicine*, 1927; and Frazer, *Golden Bough*, xi, p. 62. H. Chauvet, *Légendes du Roussillon*, 1899 Section, Les herbes de la Saint Jean. "Il est d'usage en Roussillon d'allumer de grands feux de joie sur les places publiques et sur les montagnes la veille de la Saint Jean (dans la soirée du 23 ou 24 juin). Mais ce qui caractérise la Saint Jean c'est la cueillette de la 'bonne aventure'. Dans une joyeuse exode jeunes gens et jeunes filles se répandent à l'aurore dans la campagne pour faire des bouquets de plantes ayant une spéciale vertu: orpin (herba de Sant Joan), verveine, mille-perthuis, jasmin, camomille, citronnelle, fougère, thym, ou romarin. La verveine et le mille-perthuis sont les plus recherchés . . ."

²⁶ *Sport and Country*, July 19th, 1946; also J. Crouch, J. Naghski and C. Krewson, *Science* (U.S.A.), February 15th, 1946.

²⁷ K'eogh, *Zoologia Medicinalis Hibernica*, or a treatise of Birds, Beasts, Fishes, Reptiles or Insects . . . giving an account of their medicinal virtues and their names in English, Irish and Latin.

²⁸ See Walker, *Bee Stings and Rheumatism*; *British Medical Journal*, 10, x, 1908.

²⁹ The reference to a nitrogenous base in bee sting fluid is a personal communication from the late Sir Gowland Hopkins.

One curious anthropological detail in the mental development of peoples both in the remote past and among primitive folk today was the failure to apply experience gained in one branch of work to another. The amount of biological and chemical knowledge shown in the elaborate manufacturing processes of arrow or hunting poisons was, and is, considerable. The ability to select saponin-containing plants for stupefying fish and the preparations required for laying down poisonous baits are examples of this practical information. McKenzie points out that the Egyptian embalmers *must* have possessed a good knowledge of pathology and biochemistry as well as of anatomy.³⁰ Yet there is little evidence that this information was used in other essentially similar problems to increase the amenities of life and this is especially true in the fields of surgery and of medicine. Although trephining was known as far back in time as the Neolithic period it seems to have been, in Europe, almost entirely limited to children (only one example of trephining is known in England, according to Parry).³¹ It would seem that Broca's theory, that trephining was carried out for the cure of mental disorders, is incompatible with the idea originated by Wölfel that the operation was for relief of depressed fractures resulting from club, stone or missile injuries. The treatment is carried out by some races in the South Seas for headache, vertigo, etc., so that it should be possible to obtain definite information as to the herbal dressings used on, say, Uvea Island ;³² these could be identified, and the species, as well as the active principles, identified. Such data would be of great interest, as the exposed brain membrane is extremely liable to infection. Pechey recommended poultices of cow and of human faeces for wounds,³³ and the "Zebethum Occidentale" of Paracelsus was merely human faeces dried and made into dressings. In Britain, dogs and sheep are attacked by a Cestode known as *Multiceps multiceps* (= *Taenia coenurus* or *Coenurus cerebralis*).³⁴ The cystic stage occurs in the brain of the sheep and, as the site can be determined by a change in the bone texture, a crude trephine operation is carried out. The mortality is high and the shepherds use dressings, the nature of which they are reluctant to divulge, but, if the animal survives operation, convalescence is usually uneventful.

McKenzie,³⁵ Bernhard-Smith³⁶ and others include excellent lists of

³⁰ *Infancy of Medicine*, 1927. ³¹ *Trans. Roy. Soc. Med.*, vol. xiv, No. 10.

³² Turner, *Samoa a Hundred Years Ago and Before*.

³³ *A plain introduction to the art of Physick*, 1697.

³⁴ Walton and Wright, *Agricultural Parasitology*, 1927.

³⁵ *Infancy of Medicine*, 1927.

³⁶ *Poisonous Plants of all Countries*, 1923.

herbal remedies, grouped according to the active principles, and of poisons, both taken from the literature of folklore and of biochemistry. The classification seems to be rather academic but the lists are invaluable to students in the subject. The actual therapeutic value of many of our herbal simples has long been a matter of dispute between pharmacologists and folklorists, and there seems little chance of any agreement between the extreme views of a large group of "health" enthusiasts who follow blindly all modern cults, of folklorists interested in the types of country cures, and the somewhat academic attitude of professional pharmacologists. The "back to nature" exponents usually exhibit a touching faith in the opinions of herbalists and assume that all plants described in the older herbals possess the virtues attributed to them. The professional school, quite naturally, throw the burden of proof upon those, who, from lack of training and adequate facilities, are unable to carry out the elaborate tests required to decide on the merits of any plant used in folk-medicine. It does not follow that because any "herb" possesses a definite pharmacological value that it should be admitted to the Pharmacopoeia—there are often other and better remedies available. But it is obvious that some of the old country preparations of fresh or dried native plants—teas, poultices, wet dressings, infusions or decoctions—may possess a different action to pure alkaloids, tinctures and other official preparations. The latter group are standardised as efficiently as their nature will permit and the posology of drugs possessing a high toxicity is carefully determined. It is fortunate that most of the country herbal simples have but little specific action and are quite safe to use, even in widely varying amounts. The difficulty of regulating dosage for preparations of the more highly toxic plants was appreciated by the writers of the great herbals who noted the possible effects of an over-dose. We may take *Conium maculatum* (hemlock) as an example. Nicolaus Perottus³⁷ says :

"The word Cicuta is used because the plant has, as it were, a stem (*cutem*) round it and is hollow (*vacua*) inside. There is a word Cicuta meaning the sheathing part of a reed between the nodes. Virgil, "I have a pipe made up of seven cicutae." Another herb is called Cicuta from its green stem which is hollow and (with swollen nodes) like that of a reed. It is often two cubits higher than the other and branched at its apex with leaves narrower than the coriander and with a strong smell, more powerful than anise. The root is hollow and will not propa-

³⁷ Edition Venice, 1470. Section kindly translated by Dr. W. H. S. Jones for the writer.

gate the plant. Men get cold in the extremities. The remedy is, before the Cicuta reaches a vital part, to give heating wines. Cicuta (hemlock?) when drunk in wine has no antidote and thereby Socrates was put to death. There is a soothing medicine made with it for cooling the stomach. It checks all sensation when placed on painful parts and has a wonderful effect in pleurisy. A man named Anaxillaus says that if the breasts are smeared with the juice of Cicuta (before marriage?) onwards they will always remain firm. It has been discovered that, if it is smeared (applied) to the testes at puberty, desire will disappear."

Gerarde and Johnson,³⁸ in their description of hemlock, include the following warning :

The vertues. . . . "It is therefore a very rash thing to lay the leaves of Hemlock to the stones of young boys or to virgins' breasts . . . for it is one of the deadly poisons which killeth by his cold qualitie as Dioscorides writeth saying, Hemlocke is a very evill, dangerous and poysonous herbe insomuch that who ever taketh it into his body dieth remedillesse except the party drink some wine, that is naturally hot, before the venom hath taken the heart as Pliny saith, but being drunk with wine the poison is with greater speed carried to the heart by reason thereof it killeth presently. Therefore it is not to be applied outwardly much lesse taken inwardly into the body."

Parkinson³⁹ says : " Hemlocke is exceeding cold in qualitie and very dangerous especially to be taken inwardly . . . although some do appoint it to be applied outwardly to the cods of those that have venerous dreams or the like, or to maiden's and women's breasts to repress their swelling and repell their milk . . . it often proveth that the remedy is worse than the disease."

Shepherds have always been well aware of the danger of their charges eating hemlock. They arranged their sheepfolds to avoid any patches of Conium, and farmers kept down the plant in pastures and grazing areas. In 1928 there was a heavy growth of Conium all over the country and in the same season an outbreak of " grass sickness " among stock. It has been suggested—and on good evidence—that some, at least, of the cases diagnosed as grass sickness were in reality due to hemlock poisoning—the symptoms were almost identical, fragments of hemlock were found in the intestines and the cases examined always occurred in districts where *Conium maculatum* was a common plant.⁴⁰

³⁸ *Herball*, ed. 1636.

³⁹ *Theater of Plants*, ed. 1640.

⁴⁰ *Veterinary Record*, Aug. 31st, 1929, article " Plant Poisoning in Animals "; see also letter in *E. D. P.*, July 7th, 1928.

At one time waters, made either by maceration or by distillation, were used very largely in folk-medicine. Druggists' shops and the still-rooms of the large country houses were always busy with the preparation of different waters. The 1932 edition of the *British Pharmacopoeia* only contains two waters—dill and cinnamon—as seven others—quoted in the previous edition were omitted. Gesner in his book on the subject⁴¹ describes 104 waters, nearly all preparations of common English plants, amongst them dodder, strawberries, rotten apples, beech and other unlikely botanical sources. Distillation would remove the volatile constituents and essential oils and these probably imparted a flavour or perfume to the preparation. The so-called animal waters such as "water of capon", were prepared with aromatic plants as well as (in this example) the flesh of castrated fowls. "Water of a hen" required that the bird be plucked alive "to stir up the blood" but plants were added before distillation. A prescription for "Lady Northcliffe's snail water"⁴² for consumption, convulsions, palseys, vapours, etc., needed one peck of garden snails and two quarts of earthworms, distilled with two handfuls each of Angelica and Celandine, three handfuls of Wood Sorrel, Agrimony, Betony and new dock roots, three large handfuls of inner bark of Barberry, and three and a half handfuls Rosemary tops and flowers. One and a half handfuls Bearsfoot, one handful of Rue, one ounce each of Fenugreek and Turmeric, half a pound of hartshorn shavings, half an ounce of Saffron and three ounces of cloves. These, with three gallons of strong ale and a quart of canary (wine), were distilled in an alembick.

The same stillroom book⁴³ gives direction for preparing "Oil of swallows", and the constituents included one handful each of: Alexander leaves, Bay leaves (young), Bugloss, Borage, Box, Water Betony, Red Colewort, Camomile, Dandelion, Carduus, Daisies, Agrimony, Elder leaves, Houseleek, Broom, Fennel, Hysop, Orpine, Ground Ivy, Knot Grass, Fumitory, Succory, Lavender, Cotton, French Mallow, Marygold, Smallage, Plantain, Pennyroyal, Rue, Ribwort, Red Sage, Rose Champion, Rosemary Tops, Selfheal, Sage, Strawberry, Saxifrage, Hollyhock, Valerian, Violet leaves, very young, Walnut-tree leaves, Woodbine, Wormwood. These herbs were stamped in a mortar with four ounces of cloves. Twenty-four young swallows bruised in a mortar "quick" (i.e. alive) with four ounces of cloves were added to the herbs,

⁴¹ *Practice of the New and Old Physick*, ed. 1595.

⁴² MS. receipt book, Mrs. Palmer, 1700, in possession of the writer.

⁴³ Mrs. Palmer, MS., 1700, on "Cookery and Home-Medicine".

and placed in a vessel with three quarts of neatsfoot oil, four ounces of May butter and four ounces of salad oil. Finally the whole concoction was boiled in a water bath for twenty-four hours and strained through a cloth. A quarter of a pound of beeswax was then added and the complete "oil" boiled for a further period of four hours. Oil of swallows affords a very fine example of polypharmacy in folk-medicine. Medical prescriptions of the same period often contained over twenty different constituents. There were two different types of "waters". One was intended for internal medicine, the other group was for external application as toilet preparations and these were often named after well-known beauties of the period or of classical times.

Among the animal medicines blood was used as a cure for several diseases. Administration of the blood of a cat for epilepsy was a widely spread treatment and seems to have come down from Anglo-Saxon times.⁴⁴ Pechey⁴⁵ recommends cat fat rubbed on the umbilicus or three drops of blood in lime-flower water as cures for epilepsy. Mrs. H. Woolley⁴⁶ prescribed cat's blood for shingles and the blood of a mole for epilepsy. The latter author claimed to have had access to many medical text books and it is quite probable that Alexis of Piedmont⁴⁷ was one of them as this writer was considered to be a guide to simple medical practice. Alexis gives one very well-known remedy of Tudor times—"oyle of red dogge." This was made of a red-haired dog, strangled for the purpose, and boiled in ale, S. John's wort, wild marsh-mallows, wallworte and saffron were added.

Pomet⁴⁸ devotes a large section of his great work to drugs of animal origin. Musk, honey, beeswax, ambergris and others are still used in pharmacy. But unicorn's horn, human skull, human fat, viper oil and other similar substances were becoming obsolete, even in Pomet's time.

He quotes the case of elks who were said to cure themselves of epilepsy by touching their left ears with their left hind hooves. Left hind elk's hoof was much used as a cure for epilepsy in consequence of this legend, and the author gives directions to druggists for recognising hooves from the left hind legs of elks when shown on the drug markets.

(To be continued)

⁴⁴ See Cockayne, *Leechdoms, Wortcunning and Starcraft*, Rolls' series.

⁴⁵ *A Plain Introduction to the Art of Physic*.

⁴⁶ *The Queen-like Closet*, 1680.

⁴⁷ *Secrets*, several editions.

⁴⁸ Pomet, *A Complete History of Druggs*, third ed., 1737.

COLLECTANEA

THE FOLK TALE, BY STITH THOMPSON

[The following note on the above, which was reviewed by Mr Kenneth Jackson in *Folk-Lore* for September, 1947 (Vol. lviii, pp. 339-41), has been contributed by Professor R. M. Dawkins. Ed.]

PROFESSOR STITH THOMPSON'S recently published very important book, *The Folk Tale*, has already been reviewed in *Folk-Lore*. But of a book which covers so much ground, it is always possible to say more, and I am allowed these pages to add some few remarks which have struck a man who has recently been devoting his attention to the special study of the folktales of Greece and the adjacent countries of the Nearer East.

The book is divided into four parts of very unequal length. The first, pp. 3-12, is introductory. The author very usefully defines and distinguishes the several varieties of what in general may be called Folktales, discussing such forms of narrative as *märchen* and *novelle*; legends and sagas; fables and animal stories; explanatory tales, what since Kipling's time we have become accustomed to calling *Just So* stories; "merry tales", the German *Schwank*, what in English, at least since Clouston's book, can generally be called *Noodle Stories*; and a few others.

The longest part is the second, of 284 pages; rather more than half the whole book. It is headed, *The Folk Tale from Ireland to India*, probably the region of the world of greatest interest to most readers of *Folk-Lore*. The author begins with a list of twelve subdivisions in the material. These are mostly geographical: *India, Scandinavia, France, Italy*, and so on. A few headings are, however, rather cultural: notably, *The Moslem Countries*, and, rather surprisingly, *Jewish Tradition from Asia Minor*. Several countries, we are told, have been left out, as belonging partly to one and partly to another area. Examples given are Albania and Greece. Of Albania we as yet know so little that not much can be said, although the very large still unpublished collections made by Mrs. F. W. Husbick suggest interesting possibilities, but the folktales of Greece, however strong the Turkish and significant the Italian influence may be, are so numerous and of so well marked a character that they surely have claims to a more prominent position.

These considerations lead me to some remarks on the bibliographical lists on p. 476: *Principal Collections of Folk tales*, in which some of the weaknesses of the twelve divisions seem to be reflected. We have mentions of independent books only; collections of folktales in periodicals are left aside. Anything like a full bibliography of folktales would be a book in itself and some selection here was imperative, yet this omission of periodicals has had for Greece at least most unfortunate results. It leaves unmentioned the large collections in such periodicals as *Δασογραφία Θρακικά*, *Ἀρχεῖον τοῦ Μόντου*, to name only a few of the most outstanding. *Folk-Lore* and *La Calabria* also have important collections. Even



