List of Mycetozoa, Selby. Gulielma Lister.

A. incarnata Pers., By., P., S.
A. cinerea (Bull.) Pers., By., E., P., S.
A. pomiformis (Leers) Rost., C., P., S.
A. nutans (Bull.) Grev., C., By., E., P., S.
Perichaena corticalis (Batsch) Fr., P.
P. depressa (Lib.) Rost., By., P.

This makes a total of fifty-two species, and is the second largest list of Mycetozoa recorded on our forays. The wonderful Forres visit in 1912 yielded eighty-one species, that of Swansea, in 1915, forty-seven species; Shrewsbury in 1916 and Wrexham in 1910 each gave us forty-four species; Haslemere, in 1913, forty-two species; and Doncaster, in 1914, thirty-six species.

PRESIDENTIAL ADDRESS.

By the Very Rev. David Paul, LL.D., D.D.

ON THE EARLIER STUDY OF FUNGI IN BRITAIN.

It was natural that, among those who in ancient times began to observe the vegetable world, and to unite its individual productions into groups, attention should have first been directed to the Flowering Plants. The striking beauty of so many of them, their wonderful diversity in form and colour and fragrance, and the manifold ways in which they could be made use of for the advantage of man, early arrested the eye, and stimulated curiosity, and led to their closer study. But Fungi had a hard fight to be included in the awakened interest in trees and shrubs and herbs, and it is only in comparatively recent times that they have won their way to adequate recognition. No doubt Theophrastus, three hundred years before Christ, wrote a History of Plants which is still extant, in which he makes many references to these lower and less conspicuous plants, and a hundred years later Dioscorides compiled a Treatise on Materia Medica which was for many centuries received as a standard authority, and in which Fungi are not overlooked. Then soon after the middle of the first century of our era Pliny the Elder wrote his Historia Naturalis. It is
in no sense a scientific work, and it is not even the work of an original observer; Pliny was only a man of astonishing industry who collected his material from all available sources, and set it down in very confused form. We have to thank him, however, for his diligence in gathering together a storehouse of information on the ancient world and its knowledge of plants, which otherwise we should have known nothing of. These earliest writers while they mention various Fungi seem to regard them as being so well known as to require no exact description, and it is, except in a few cases, impossible to identify them satisfactorily. They looked at them almost entirely from the gastronomic point of view, and the true study of Fungi cannot be said to have then begun. They did not contribute any helpful suggestions to the earliest observers of fungi in Britain.

Many centuries elapsed before even the roughest foundation of the science of Mycology was laid. All through the Middle Ages plants were studied mainly for their supposed curative properties, and Fungi do not appear to have found a place in the curious prescriptions of the old leeches. It was not till the sixteenth century that they began to be included among plants, or to be dealt with either in this country or abroad alongside of the observed and described Phanerogams. At the opening of that century no book on Botany had been published in Britain, but during its course at least four passed through the press, none of them of much use for our purpose, but all of them of great interest as illustrative of the manner in which what is now a great science was born, and nursed in its infancy. The development of that science is a vast subject, and I propose only to sketch to-night the steps by which our knowledge of Mycology was gradually advanced by our earlier writers.

In 1516 the first edition of the Greate Herball was published, no author's name being attached to it. It is a very curious book in black letter and is the earliest British book on Plants. It deals mainly with their medicinal qualities, and gives practically no descriptions. To turn over its pages and read here and there affords a good idea of the position of plant study before it had been rescued from the childishness of the Middle Ages. The writer evidently draws largely on still earlier books of the same kind published on the Continent. There is one short chapter on Fungi, the only one that we need notice, and it will illustrate the character of the book if I quote the quaint remarks the author makes on them:

"Fungi ben muscherons. They be cold and moyst in ye third degre and that is shewed by theyr vyolent moysture. There be twoo maners of them, one maner is deadly and sleeth them that eateth of the, and be called tote stools, and the other
doeth not. They that be not deadly have a gross gleymy moystur, that is disobedient to nature and digestion, and be perillous and dredful to eate, and therefore it is good to eschewe them, such as eate them and fear not to fall inconvenience, seeth them in water and medle them with gynger, peper, caruy, calamint, or orygan and such other, and then drinke olde wyne, pure and stronge. And they that be of olde complexion, after the take grene gynger, dyaterion, pyperion, solergenne and tryacle. The deadly muscherons ben of diuers actions after their diversitie and sleeth by their exceeding great cold and moysture ye is in the fourth degre. Some slee by the evell quality of the place that they grow in as by rusty yron, rotten cloth or wood or nigh the hole that serpēts brede in, or thei that grow by great trees that have glewyny humours and frothe. The signs of them that be deadly is a slymye softenesse as they were puffed and be of thick substaunce, and if they lye a whyle broken they will rotte."

I have given this at length as shewing the style of the book, and as being the first notice of Fungi I have met with in the English language. Evidently the writer has in view only the larger and gilled Fungi, and just as clearly he has not even a rudimentary knowledge of them.

Passing from that book, the next that claims attention is *The Herbal of Wm. Turner*, Doctor in Phisick, as he is called on the title page, which was first published in 1551, and afterwards in an enlarged edition in 1568. This shews a great advance on the *Greate Herball*, and if one were dealing with flowering plants it would be necessary to consider it at some length, but it contains no notices of Fungi. Among the many woodcuts are some of ferns which are not separated from flowering plants. Turner was a theologian and a church dignitary, a scholar and a Reformer, who wrote much on religious questions, but he is now known only as a botanist who was an original observer, and who had shaken himself clear of most of the medieval fancies. It would have been interesting to know what were the views on Fungi of this "first of English botanists," as he is deservedly called.

A very important work was published in 1597, the well-known *Gerard's Herball*. However interesting it may be from a general botanical point of view, the day of Fungi had not yet arrived. Gerard does not indeed omit Fungi altogether, for he devotes one chapter to them. He calls them "bastard plants" and speaks of them as "earthy excrescences called mushrumes or toadstooles, whereof some are very venomous and full of poison, others not so noisome, and neither of them very wholesome meate; wherefore for the avoiding of the
venomous quality of the one, and that the other which is lesse venomous may be discerned from it, I haue thought good to set forth their figures, their names, and places of growth." There is no attempt at classification except that they are divided into edible and non-edible, but there are fairly good woodcuts of seventeen species including the Fly mushroom, a Clavaria, apparently aurea, Jew's ear, Clathrus cancellatus, Morel, Stinkhorn, and a kind of Tuber. It may be noted that the Morel is put among the non-edible Fungi, and that the figure of Clathrus was taken, as well as almost all the others, from the Icones of Tabernaemontanus, published in 1590.

Another well-known Herbal was published in 1640 by John Parkinson under the title of Theatrum Botanicum. He calls himself "Pharmacopaeus and King's Botanist." Among the 4000 plants which he attempts to describe are 64 Fungi—32 wholesome and 32 dangerous. His figures are mostly the same as Gerard's, figures that did duty in other botanical books of the period, the blocks having been brought from the Continent. His classification and descriptions shew no improvement on those of Gerard.

Parkinson was the last of the Herbalists. Their notions of the nature and affinity of plants were of the crudest. Anything that could be called a system of classification was unknown to them. They still burned incense religiously to Theophrastus and Dioscorides, whose authority they would regard it as little short of blasphemy to question, and whose wildest flights of fancy they quote with evident approval. One looks through their huge tomes with admiration of their industry and zeal, but with amazement at their naïve simplicity and lack of a scientific spirit. Their merit lies in their collection of so many plants, however disorderly it may be, and in their illustrative woodcuts. Fungi have naturally suffered most at their hands, even those that required no microscope for their observation. In justice to them we must remember that they had no books to refer to which could throw light upon the subject. They were dealing with the very beginnings of a difficult branch of Botany, and little could be expected of them.

Taking leave of these, we pass into the next century to notice a work which marks an epoch in British Botany—the Synopsis methodica stirpium Britannicarum of John Ray, first published in 1690 and third edition in 1724, after his death. Ray, the son of an Essex blacksmith, went to Cambridge and afterwards took Holy Orders. Two of his sermons were famous in their day. At College he lectured on Greek, Mathematics and Latin successively. Leaving it in 1662 he gave himself entirely to his favourite study of plants, travelling in search of them
through the greater part of Britain, as well as the Low Countries, Germany, Italy and France, and embodying his researches in his great work, *Historia Generalis Plantarum*, first issued in 1686. It was impossible for a man of his acute mind to neglect Fungi, though he threw his strength into the Phanerogams. In his *Synopsis methodica* we find the first classification of them in the English language which is of any interest. He divides them into five classes:

1. Fungi with both pileus and gills—of which he describes 57 including *Lactarii* and *Cantharellus.*

2. Fungi with a pileus but no gills, such as the *Boleti* and *Phallus*—17 described.

3. Fungi without a pileus. Twenty-two species of these are described, and he divides them into three groups. The first group he calls *Fungoides*, and defines the term as a fungus without a pileus, whose stems are variously shaped and divided but whose substance is uniform and is destitute of gills or pores. As examples *Xylaria polymorpha* and *X. hypoxylon* are given. The second group under this head is *Pezizae*, of which he gives 22, including among them the Jew’s ear. The third group is *Agaricus*, a term used by him in its old sense, and defined by him as a “fungus which has neither pileus nor stem, and generally grows laterally and horizontally on trees, sometimes smooth beneath, but for the most part with the under surface divided into gills or pores.” Of these he describes 28, and among them what he calls *Agaricus intybus* and *A. ignarius*. He would include, in addition to the stemless *Polypori*, such Fungi as *Pleurotus*, *Crepidotus*, etc.

4. Fungi pulverulent. “Puff-balls; dusty mushrooms; Bull-fists.” He describes 13, including *Lycoperdon giganteum* and *Geaster.*

5. Fungi subterranei. All underground Fungi, e.g. Truffles.

It will be noted that, however imperfect, this is still a classification. It is a groping after an orderly arrangement, and is distinctly superior to anything we have yet met with. Ray had evidently been giving Fungi considerable attention, for in each successive work of his there is an advance. In his *Catalogus Plantarum* (1677) about 25 Fungi are given but without any order or classification at all. In his *Historia Plantarum* (1686) he divides them into four classes: (1) Terrestrial Fungi, with pileus and gills, which are subdivided into the old groups of edible and noxious; (2) Terrestrial Fungi without gills, but having a more or less distinct pileus; (3) Fungi of every kind that grow on trees; (4) Underground Fungi. This is a much poorer classification than that of the *Synopsis* which has been already given. In it the foolish distinction between edible
and poisonous, which had obsessed all previous British authors, is dropped, as also his class of tree-fungi, and his final classification shews scientific progress in his ideas. Ray, as well as Turner, has been called the "first British Botanist," and even in regard to Fungi that honourable title is deserved. His Synopsis was for long the standard English Flora.

After the death of John Ray at the beginning of the eighteenth century the first name which claims attention in connection with the study of Mycology is that of William Hudson (1732–1793). He was a Fellow of the Royal Society and Director of the Botanic Garden at Chelsea. His reputation rests on his Flora Anglica of which the first edition was published in 1762. By this time the writings of Linnaeus had become known in England, particularly after his visit to this country in 1732, and his system of classification became the subject of much criticism and controversy. Hudson was one of his principal champions, and his Flora was the first of any importance to be arranged according to the principles of the great Swedish botanist. With its general merits we are not concerned here further than to note that it was received with acclamation, and superseded as the chief English text-book Ray's Synopsis, which had held that position for seventy years. It is interesting to us now from the fact that he dealt as fully with Cryptogams as was possible at the time, describing Ferns, Mosses, Algae and Fungi. He adopts with great advantage the binomial nomenclature of Linnaeus. His indebtedness to Ray's Synopsis, as well as to Bauhin's Pinax, is freely acknowledged. The method he adopts is, first to give the description of Linnaeus from his Species Plantarum, then those of Bauhin and Ray when available; to this he adds an English name and the habitat. His meagre list is divided into nine genera: Agaricus, Boletus, Hydnum, Phallus, Elvella, Peziza, Clavaria, Lycoperdon and Mucor. And the curious thing is that instead of adding to the number of Ray's plants he does not describe nearly so many. Ray gives 57 gilled Fungi, while Hudson has only 24; of his order Boleti (including Polypori) Ray gives 17 and Hudson 9, and so on. No doubt in the second edition of the Flora Anglica published in 1778, the number of Agarici has mounted from 24 to 51, and the number of Boleti from 9 to 13, but as the Agarici included all gilled Fungi and the Boleti included all Fungi with pores, it is evident that a very large number of quite common plants in both genera were overlooked by him. In his second edition he adds a genus Clathrus, containing eight Mycetozoa. It is not however worth while to examine this Flora further. Hudson had given little time or attention to Fungi, and he did not know more than a very few. He had
too much on hand in trying to deal with phanerogams and cryptogams together. In his preface he frankly acknowledges that in the field of Fungi he was greatly deficient, and that taught by experience he could repeat the words of Linnaeus that the whole subject was still in chaotic confusion. It was impossible for any one in his day seeking a knowledge of Fungi to obtain help from his book.

From Hudson let us pass to Relhan whose *Flora Cantabrigiensis* was published in 1785, twenty-three years after the *Flora Anglica*. Like so many of the botanists of that century and the preceding, Richard Relhan was a clergyman, and he became a Fellow of King's College, Cambridge. In his first edition he follows closely on the footsteps of Hudson, but adds a separate class of *Sphaeria*, composed of *Xylarias* and *Hypoxylons* with one *Nectria*. His second edition however which was published in 1820, contains several features which mark an advance in classification. Under the influence of Withering he attempts to break up the genus *Agaricus*, in which were still included all gilled Fungi. He first splits it up into three groups of stalked, slightly stalked, and stemless, dividing these again according to the attachment and colour of the gills. He adopts a genus *Merulius*, which is not found in his first edition, containing five *Marasmii*, two *Cantharelli*, and a *Craterellus*. The number of his *Agarici* is increased from 35 to 96, his *Boleti* from 7 to 22, and so on. Another genus added is *Auricularia* of Bulliard, embracing three *Stereums*, one *Corticium*, a *Thelephora* and a *Merulius*. He did not altogether overlook the minute Fungi, but includes *Sphaeria*, *Stemonitis*, *Trichium*, *Aecidium*, etc., giving two or three of each. His second edition of the *Flora Cantabrigiensis* is thus an advance on his first edition, and of much greater value to students, but his descriptions are too short for satisfactory identification. This defect is partially counterbalanced by his constant references to the figures of Sowerby, Bulliard and Bolton.

The *Flora Scotica* of Lightfoot appeared in 1777, and passed into a second edition in 1792. It is of much interest, especially to Scotsmen, so far as phanerogams are concerned, but it contains nothing noteworthy in regard to Fungi, only 67 species being referred to.

John Sibthorp, Professor of Botany at Oxford, published in 1794 his *Flora Oxoniensis*, but that too as a contribution to Mycology was of no particular importance.

Then, in 1788, there appeared Bolton’s *Historia Fungorum circa Halifax sponte nascentium*, which is valuable for its well-known illustrations, but is mentioned here that a passage from
its preface may be quoted. "The plants," he says, "which now compose the order Fungi were formerly supposed to be of equivocal generation, the sport of nature, the effect of putrefaction or the brood of chance, but that they owe their original to the seeds of a parent plant is now well known, having been proved by, inter alios, the ingenious Hedwig, who in a work entitled *Historia generationis et fructificationis Plantarum Cryptogamicarum*, published in quarto at Petropolis in 1784, has by means of the microscope proved beyond dispute the existence of stamen and style, or of male and female organs in these, as perfect and regular and effective in the production of proper seeds as in any other vegetable where they are more obvious to the sight." The passage is of interest, not as being a correct statement of the method of the reproduction of fungi, but as an attempt to dissipate the crude ideas that formerly prevailed, and to provide a definite place for fungi within the vegetable kingdom.

The popular interest in Botany which was growing in the last half of the eighteenth century is evidenced by the number of Floras that it produced. Hill's *Flora Britannica* appeared in 1760, Hudson's *Flora Anglica* in 1762, Martyn's *Plantae Cantabrigienses* in 1763, Withering's *Botanical Arrangement* in 1776, Lightfoot's *Flora Scotica* in 1777, Relhan's *Flora Cantabrigienses* in 1785, Sibthorp's *Flora Oxoniensis* in 1794, Dickson's *Catalogus* in 1795, and Hull's *British Flora* in 1799. It was the era of Floras. No doubt interest mainly centred in Flowering Plants, but it was gradually spreading to Cryptogams also. Of these fungi were the last to be brought into the current, and the progress in the century, since Ray's *Synopsis* appeared in 1690, was not all that might have been expected, even in the case of the larger Fungi that can be examined with such ordinary lenses as were then in use. To deal in detail with all these Floras would occupy much time, and is unnecessary for our purpose, but the appearance of Withering's *Arrangement of British Plants* is worth a short notice. It is a work for which I have an affection, as it is the only botanical book I had access to when I was a boy.

Withering was born in 1741 at Wellington and was educated at the University of Edinburgh, where he took the degree of M.D. in 1766, afterwards practising at Stafford and at Birmingham. In 1776 he published his *Arrangement of British Plants* which reached its third edition in 1796, three years before his death. It is in four volumes, the last volume being devoted to cryptogamic plants. He was not a distinguished botanist, and he seems to have taken little or no share in the discussion of the plant problems that then occupied the attention
of his botanical brethren. His merit lies in the fact that he
was an able and industrious field-botanist whose labours went
far to increase the knowledge of plants in this country. Both Sir
James E. Smith and Sowerby held his work in high esteem. He
had the good sense to write his Flora in English whereas Hudson,
Relhan and their predecessors had used Latin. In the Fungus
part of his book the descriptions and notes are fuller and clearer,
so that it is always possible to identify the plant he is dealing
with. His division of the gilled Fungi too is more elaborate
and he passed a much larger number under review. Evidently
he had examined them carefully for himself. His subdivisions
rest on the nature of the stem, whether solid or hollow, whether
central or lateral or wanting, on the colour of the gills, and their
mode of attachment. This is so far a convenient grouping, but
it is not natural; it does not take account of volva or ring or
the character of the veil or the substance of the flesh. Conse­
quently utterly different groups of gilled Fungi, such as Agarici
proper, Cortinarii, Hygrophi, Marasmi, Lactarii, are found
side by side. At the same time it was the most complete
division of the vast order of Agaracini that had yet been pro­
posed. In principle it is the same as that of Hudson but it is
more fully elaborated. His division of the Boleti, including
the Polyphor, is similar—pored Fungi with stem central or lateral
or wanting, and with pores white, brown, buff, etc. His
remaining genera are similar to Hudson's—Hydnnum, Helvella,
Auricularia, Peziza, Nidularia, Phallus, Clavaria, Tuber, Lycoper­
don, Reticularia, Sphaeria, Trichia, Mucor. Though a great
field of Mycology was not traversed either by him or by any
of his predecessors, partly because of the inferiority of their
microscopes, and partly because so much work among the less
minute Fungi had still to be performed, yet the knowledge of
Fungi was increasing yearly, as is plain from the fact that
Relhan's 96 gilled Fungi had mounted up in Withering's Flora
to no fewer than 280. The true principles of classification,
had, however, had not as yet been grasped. Nevertheless, those
British students of Fungi of the eighteenth century, whose
works we have been able only to glance at, beginning with
John Ray, author of the Synopsis Methodica, ought not to be
forgotten, or their work undervalued. They prepared the way
for fuller light to be shed on a difficult subject, and perhaps
none of them is more worthy of recognition than Withering,
who has not, I think, received all the credit that he deserves.
For the first quarter of the nineteenth century there is not
much of moment to notice. Sowerby's admirable figures of
Fungi were published between 1797 and 1803, and Greville's
Scottish Cryptogamic Flora between 1823 and 1828. The
plates in both these works have not been surpassed, and they were of first-class importance at the time for the study of fungi, and indeed are so still. It was only however in the second quarter of the century that any forward movement was made in this country in the study of Fungi, that which will always be associated with the name of Berkeley. Before touching briefly on his great contribution to Mycology, it is necessary to mention the name of one to whom he was much indebted, Elias Fries of Sweden. I have not hitherto taken notice of the work of foreign botanists or of their influence on our own countrymen as that would have led into too vast a field, but Fries stands by himself in the department of Mycology and his influence on all his contemporaries and successors has been too marked to be left unmentioned.

His first important work on Fungi, the Systema mycologicum, was published between 1821 and 1832; his Epicrisis in 1838; his Monographia between 1857 and 1863, and his Hymenomycetes Europaei in 1874. How he prepared himself for these works he tells us himself. He describes his wanderings through every accessible part of Sweden, his untiring industry in observing and collecting specimens, the unflagging enthusiasm with which he pursued the study of Fungi from the time that as a boy of twelve he accompanied his mother into a wood to gather strawberries, and there found a very large specimen of Hydnum coralloides, his passion for accuracy shewn in his examination and description, three times repeated, of all the species he could discover, and his determination to make his different lists as complete and perfect as he possibly could. That spirit in which he worked for more than sixty years lay at the root of his success, and prepared the way for the high position he received among European mycologists. He developed a genius for classification and for detecting affinities, and among the Hymenomycetes in particular his grouping of the plants has hardly been improved on. Perhaps our love of Fries and our obligations to him cause us to exaggerate his merits, but after all allowance has been made for the devotion of pupil to master, and the warping of judgment that may arise from it, the study of earlier works on Mycology in our own country makes it perfectly clear that he stood head and shoulders above all our authors in that branch of Botany. We are not on that account to minimise what those earlier authors have done; they were groping their way among difficulties, dealing with plants presenting great perplexities, and gradually working out a scientific system. Each of the early students of Mycology made his contribution, and, as they succeeded one another, each enjoyed the benefit of his predecessors’ attempts and failures.
It could not have been otherwise, and Fries would have been the first to acknowledge his indebtedness to those who went before him. These considerations must not however blind us to the fact that in botanical classification and description he occupies a foremost place. It is mainly due to him that Mycology has so many ardent students in this country as it has to-day.

Let us pass now to Berkeley. Like so many other British Mycologists he was a clergyman, and performed the duties of two country charges in succession while he was carrying on his scientific work. His eminence as a Mycologist is well known. As far back as 1836 his reputation in that branch of Botany was so well established that Sir William Hooker entrusted him with the preparation of the volume on Fungi which completed Sir James E. Smith's *English Flora*. Elias Fries held him in the highest estimation, and regarded him as the man qualified above all others to draw up a synopsis of the Extra-European *Hymenomycetes*. As regards British Fungi he has been styled the virtual founder of our Mycology. He possessed Fries' enthusiasm, his accuracy, his power of patient observation, his wide outlook over the field of Botany, and his instinct in the detection of affinities and differences. During a long life he maintained his high place in Botany. No doubt he was a Taxonomist much more than a Morphologist, but that was in the natural order of things. Classification of plants must precede the minute investigation of their structure, and the first claim which Fungi made on a botanist in the third decade of last century was classification. We have dealt with some of the attempts to arrange the larger fungi that had already been made; let us look at Berkeley's contribution.

The first volume of Fries' *Systema Mycologicum* appeared in 1821, fifteen years before Berkeley's volume on Fungi contained in Smith's *English Flora*. It embraced the *Hymenomycetes*. On comparing the classification of these in the two books we find that they are practically the same; Berkeley simply adopted Fries' classification. Subsequently Fries improved that arrangement, adding two new genera, *Hygrophorus* and *Marasmius*, whose members had previously been included in one or other of the subgenera of *Agaricus*, and Berkeley in his "Outlines" adopted that improvement, as well as the addition of the genus *Lentinus*. There is no originality then in Berkeley's work so far as the classification of these higher Fungi is concerned. His merit as a British Mycologist lies in this, that he immediately recognised the value of Fries' divisions, and adopted them for the benefit of science in his own country. It is not indeed a perfect classification, for it is partly natural
and partly artificial. The large genus *Agaricus* had to be broken up in some way or other, as otherwise it was unmanageable, and Fries accordingly split it into what he calls *series*, determined by the colour of the spores. One had then manageable groups to deal with, but they are artificial groups, for the colour of the spores is not a sufficient basis to rest them on, and has the effect of keeping fungi far apart whose affinities are very close. It is no doubt a convenient arrangement, and as such it has held its ground. Within the series of groups, however, the arrangement is strictly natural, one might say beautifully natural, drawing together into corresponding subgenera the plants that have the closest affinity. Even in regard to the employment of spore-colour as a prime feature in the classification of *Agaricus*, there is this to be said in its favour that it is a great improvement on the use of gill-colour for the same object, as the colour of the spores is fairly constant and unchangeable, which the colour of the gills is far from being, and it is strange that the earlier mycologists did not take account of the colour of the spores at all. That Berkeley should have adopted and popularised in this country the classification of Fries is one of his chief merits.

He has, however, merit of another kind. He is, I think, unsurpassed in his description of species, and this is best seen in the fifth volume of Smith's *British Flora*. Fries' descriptions of species in the *Monographia Hymenomycetum* are very fine, but Berkeley's are as careful and minute, and appeared long before that work of Fries was published. The early descriptions of Fungi were so imperfect that it is often impossible to identify the plant described. One has only to compare the descriptions of the same species in the *Pinax* of Caspar Bauhin and in Ray's *Synopsis* and Hudson's *Flora Anglica* with those of Berkeley in Smith's *Flora* to appreciate the great advance that had been made. In plants like fungi ample descriptions are of special value, as both Fries and Berkeley recognised, if a species is to be certainly determined, and they both set themselves to provide such descriptions drawn up by themselves after comparison of many individual specimens. That is one of the debts we owe to them both, to Berkeley at least as much as to Fries.

Berkeley's merit and reputation rest on more than his identification, description and classification of species, though it may perhaps be said that in connection with that his best work was done. I have purposely laid stress on that part of his work, because in that field he was carrying on and perfecting what the earlier writers on fungi had for two centuries been giving their attention to. In dealing with the early study of
fungi in this country his name need not perhaps have been mentioned at all, and he might have been properly regarded as the inaugurator of the newer era of Mycology. But in that case the story of earlier progress would not have been rounded off, and the contrast between the earlier and later results of the study of the subject would not have appeared. When we compare him with those who went before him, we must set his work parallel with theirs, and mark how far he surpassed them on their own lines, as in the number of species he added to the British Fungus Flora and in the admirable way in which he dealt with the already recognised species both in description and classification. I have not sought to characterise his work among the lower minute fungi, because that is outside the field of the earlier study, nor to estimate the value of his *Introduction to Cryptogamic Botany*, published in 1857, in which he treated the relations to one another of the different Families of Cryptogams, though it is a work of the highest merit, and was the first comprehensive work on the subject ever produced, nor have I done more than allude to his unrivalled knowledge of exotic fungi, though it was unequalled in his day, and is witnessed to by the fact that Sir W. J. Hooker entrusted him with the description and classification of all the fungi sent to Kew from abroad, and notably with those collected by Darwin during the voyage of the *Beagle*. It does not enter into the scope of this paper to deal with Berkeley’s varied and valuable contributions to British Mycology generally, it only falls within its range to contrast the results of his study of the larger and more conspicuous fungi with those of his predecessors, regarding him as being, at least in the first part of his life, the last of the earlier students of the science.

We have thus travelled down the road of mycological study, from the dark age of the Herbals when classification was practically non-existent, and when corals and sponges were included among Fungi, onwards through successive gropings after a systematic arrangement, and through gradually increasing knowledge of the plants themselves, down to the time when Berkeley in his first published work of importance, but especially in his "Outlines," settled for British mycologists the system of classification of the higher Fungi which still, after the lapse of fifty-eight years, with slight alteration holds the field. I would end with the words of the great Swede in his preface to his *Monographia Hymenomycetum*: "To botanists who live in the country I commend the study of these fungi as a perennial fountain of pleasure and of admiration of the Wisdom which directs the whole of nature."