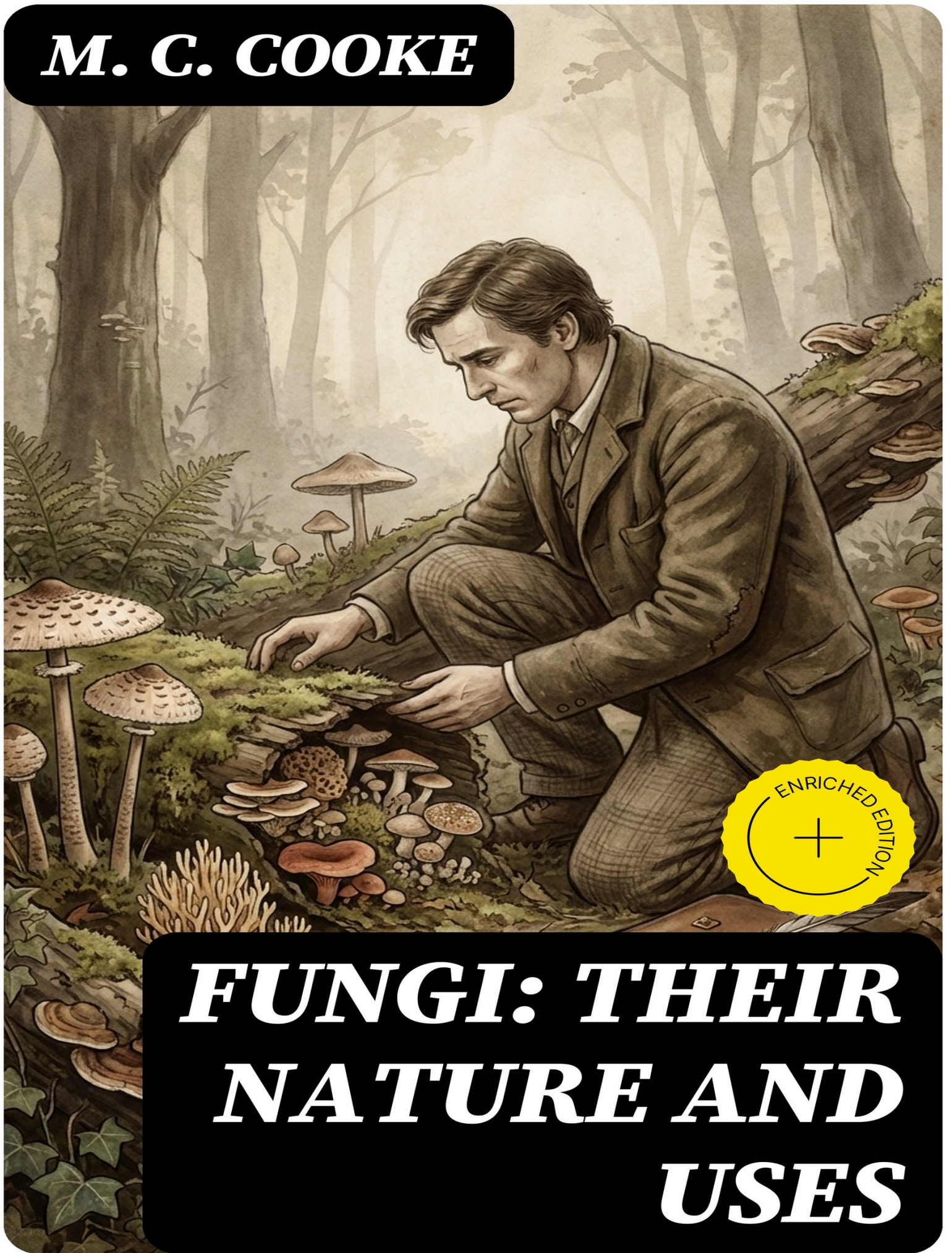


M. C. COOKE



***FUNGI: THEIR
NATURE AND
USES***

M. C. Cooke

Fungi: Their Nature and Uses

Enriched edition.

Introduction, Studies and Commentaries by Bret Alden

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Introduction

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At once domestic and wild, nourishing and noxious, fungi occupy the uneasy border where sustenance, decay, and scientific curiosity meet, and M. C. Cooke's *Fungi: Their Nature and Uses* makes that border visible by guiding readers from the familiar kitchen loaf and woodland mushroom to the hidden filaments that bind soils, invade crops, and ferment beverages, showing how the same organisms that preserve and flavor our foods can also stain walls, blight harvests, and unsettle categories of life, while encouraging a steady, patient gaze that turns everyday substances and textures into evidence of a vast, largely unseen world operating beside and within our own.

This book belongs to nineteenth-century popular science and natural history, written by the British mycologist M. C. Cooke during the late Victorian era, when affordable microscopes, public lectures, and field societies brought specialized knowledge into parlors and classrooms. Its pages move between laboratories, kitchens, breweries, gardens, markets, and the open countryside, situating fungi not in remote wilderness but in the ordinary places where people live and work. Without presuming prior expertise, Cooke addresses readers seeking reliable guidance about organisms long wrapped in folklore and fear, and he does so within a period that valued clear exposition, practical illustration, and careful observation over speculative theorizing.

The premise is straightforward and inviting: start with what fungi are, observe how they grow and reproduce, and then trace how their habits intersect with human needs and concerns. Cooke writes in an explanatory voice that is confident yet accessible, balancing descriptive precision with analogies drawn from everyday life. The style privileges plain terms and patient sequencing, building a vocabulary that makes tiny structures intelligible without drowning readers in jargon. The tone is measured and empirical, but the book allows room for wonder, so that a spore or thread glimpsed under magnification can feel as consequential as a familiar forest mushroom encountered along a well-worn path.

Throughout, the book explores the tension between usefulness and hazard. It explains why some fungi nourish while others mislead, and how the same processes that yield bread, beer, and distinctive flavors can also foster mildew, rot, and disease. It follows the route from macroscopic forms to microscopic architectures, showing how attention to structure clarifies behavior. Naming and classification matter here, not as ends in themselves, but as tools for careful judgment in the field and household. Cooke's emphasis on method—observe, compare, verify—anchors the narrative and steadily replaces superstition with repeatable, practical knowledge.

Another central thread is the way fungi reframe ideas of time and transformation. By dissolving fallen leaves, colonizing a damp corner, or overtaking a plant, they return materials to circulation and reveal a rhythm of decay that enables growth. The book lingers over fermentation as a

disciplined harnessing of such change, placing culinary and industrial practices alongside plant pathology and domestic hygiene. It acknowledges the economic stakes of correct identification and prudent handling, yet it also insists that appreciation is as vital as caution, suggesting that attentiveness to small forms and slow processes yields both safety and delight.

For contemporary readers, the work resonates as a clear ancestor of today's interdisciplinary interest in fungi across ecology, agriculture, and food culture. It offers a historical baseline for topics now widely discussed, from the roles of fungi in soil health to the craft of fermentation and the ethics of foraging. The book demonstrates how public-facing science can be rigorous without being austere, and how patient observation creates common ground between specialists and curious amateurs. Its refusal to sensationalize, even when discussing poisonous species or destructive blights, models a steadiness valuable in current debates about risk and benefit.

Approached today, *Fungi: Their Nature and Uses* reads as both primer and invitation: a primer in the sense that it introduces structures, terms, and habits with clarity, and an invitation because it insists that seeing is available to anyone willing to look closely. Some terminology reflects its era, yet the observational habits it cultivates remain fresh, equipping readers to evaluate claims, notice patterns, and connect kitchen, garden, and landscape in a single continuum. In treating fungi as neighbors rather than curiosities, Cooke leaves a lasting guide to mindful

attention, where measured curiosity replaces fear and practical understanding expands into durable wonder.

Synopsis

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Fungi: Their Nature and Uses presents M. C. Cooke's clear, systematic introduction to the fungal world for general readers and students. Writing as a nineteenth-century mycologist, Cooke defines what fungi are, how they were then distinguished from flowering plants, and why their study matters in domestic, agricultural, and industrial life. He sets a measured tone that couples curiosity with prudence, promising plain description anchored in observation. From the outset he stresses that fungi can be either troublesome or beneficial, and that sound judgment depends on understanding their visible forms and hidden structures, the conditions that favor them, and the ways people encounter them every day.

Cooke begins with form and structure, building a foundation from the microscopic threads and networks that compose fungal bodies. He explains the relation between mycelium and the conspicuous fruiting parts commonly called mushrooms or toadstools, and he details the appearance and dispersal of spores. Careful attention is given to the varied outward features—caps, pores, gills, stems, and veils—that help separate major groups. He complements these macroscopic characters with microscope-based distinctions among molds and mildews, noting how protean growth and rapid change complicate classification. Throughout, he models a taxonomic approach

that is descriptive, comparative, and attentive to limits in contemporary knowledge.

Turning to reproduction and life history, Cooke outlines the ways fungi multiply, emphasizing spore production, maturation, and distribution. He describes a spectrum of reproductive structures, including delicate sporangia and conidial forms, and he traces how heat, moisture, and substrate shape developmental outcomes. He surveys period debates about the origins of microscopic fungi and their part in processes like fermentation and decay, weighing claims against what can be demonstrated with cultures and lenses. Rather than pressing speculative conclusions, he stresses repeated observation, careful record-keeping, and the need to connect life stages that may differ strikingly in form yet belong to a single organism.

With this groundwork, the book examines how fungi act in nature and in managed environments. Cooke explains their efficiency in breaking down organic matter and the consequences of that activity for stored goods, buildings, and farmland. He distinguishes saprophytic species from parasitic ones and examines the latter's roles in plant ailments long recognized in the field—such as smuts, rusts, and mildews—and in timber decay. For each, he describes symptoms and likely agents as then understood, along with practical measures aimed at prevention and containment. The emphasis remains on recognizing patterns, limiting favorable conditions, and intervening before damage spreads.

Cooke then turns to uses, tracing how certain fungi sustain common arts of life. He describes the roles of

microscopic forms in fermentations essential to bread and beverages, and he surveys the culinary value of select fleshy species when properly identified and prepared. Practical remarks on cultivation and supply accompany cautions about variability, resemblance, and the dangers of relying on folk tests. The discussion balances opportunity with restraint: fungi can gratify taste and underwrite industry, yet prudence and knowledge safeguard against error. In presenting both benefit and risk, he seeks to equip readers to assess claims and practices on evidence.

To make that evidence accessible, Cooke offers guidance for observation, collection, and study. He outlines how to find specimens in different seasons and habitats, how to preserve delicate structures for later examination, and how to use magnification to connect field characters with minute anatomy. Directions for labeling and comparison encourage the building of small reference collections. The treatment assumes no special training, yet it consistently elevates accuracy, patience, and method. By lowering technical barriers while maintaining rigor, the book serves as a bridge between casual curiosity and disciplined inquiry into a rapidly developing branch of natural history.

The work closes by bringing together its descriptive and practical strands into a balanced view of fungi as indispensable agents, occasional pests, and everyday allies. Without overstating certainty, Cooke's synthesis shows how a grounded understanding of form, function, and circumstance can guide wise action. The result is a compact portrait of nineteenth-century mycology in motion—attentive to utility, open about limits, and committed to

observation. Its enduring resonance lies in making a complex kingdom legible to non-specialists, and in demonstrating how careful natural history can illuminate matters of health, economy, and the stewardship of human environments.

Historical Context

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M. C. Cooke, an English mycologist (1825–1914), wrote during Victorian Britain’s surge in natural history. In London and provincial societies, institutions such as the Royal Botanic Gardens, Kew, the British Association for the Advancement of Science, and innumerable field clubs organized collecting, lectures, and exhibits. Microscopes, cabinets, and botanical exchanges connected amateurs with professionals. Within that setting, *Fungi: Their Nature and Uses* appeared as a lucid guide to a group long regarded with suspicion or curiosity. It situates fungi within everyday life and scientific inquiry, exemplifying the period’s drive to render the natural world intelligible, useful, and publicly accessible.

From the 1840s to the 1870s, fungi stood at the center of transformative debates about life’s processes. The Irish potato blight of 1845–1849 made a plant pathogen a matter of national survival. Agostino Bassi had earlier traced a silkworm disease to a fungus, while Louis Pasteur’s work on fermentation and microbial life (late 1850s–1860s) and Joseph Lister’s antiseptic surgery (from 1867) popularized germ theory. These developments elevated molds, yeasts, and rusts from curiosities to agents with medical, industrial, and agricultural implications. Cooke’s volume consolidates that shift, offering readers a framework that aligns with experimental microbiology while addressing practical consequences.

Victorian natural history relied on networks of amateurs who gathered specimens and observations. In the late 1860s, the Woolhope Naturalists' Field Club in Hereford inaugurated "fungus forays," convivial, instructional excursions that drew figures such as Miles Joseph Berkeley and M. C. Cooke, and inspired similar events elsewhere. Cooke edited *Hardwicke's Science-Gossip* (from 1865) and founded the mycological journal *Grevillea* in 1872, creating forums that linked parlors, schoolrooms, and laboratories. *Fungi: Their Nature and Uses* speaks to that audience: it is both rigorous and inviting, aiming to train readers' eyes and judgment, and to cultivate an informed, safety-minded enthusiasm for mycology.

The British Empire's botanical administration intensified the study of economically significant organisms. Under Joseph Dalton Hooker's directorship, Kew functioned as an imperial advisory hub, receiving specimens, diagnosing plant diseases, and guiding colonial agriculture. In 1869, coffee leaf rust (*Hemileia vastatrix*) was reported in Ceylon, and by the 1870s it threatened plantations across South Asia, alarming planters and officials. Wheat rusts and mildews periodically damaged British crops. Cooke's emphasis on both the harms and benefits of fungi mirrors this climate: the book interprets mushrooms, molds, and mildews through the lens of public utility, offering identification, cautions, and explanations with clear relevance to imperial and domestic economies.

Technical advances reshaped what could be seen and said about fungi. Achromatic objectives and precision instruments from makers such as Powell & Lealand and Ross

in London, and later innovations associated with Ernst Abbe in the 1870s, improved resolution, illumination, and measurement. Simple microtomes and new stains eased the preparation of delicate tissues. As microscopes entered schools and middle-class homes, the unseen world of spores, hyphae, and fruiting structures became a legitimate field for amateurs. Cooke's text takes full advantage of that culture of seeing, guiding readers toward careful microscopy and illustration, and thereby democratizing observational standards previously confined to specialist circles.

The book also belongs to a flourishing transatlantic market for popular science. From the 1860s onward, publishers issued affordable series, handbooks, and lectures by figures such as T. H. Huxley, John Tyndall, and John Lubbock, while firms like D. Appleton and Kegan Paul disseminated accessible treatises. Illustrated natural history, often serialized in periodicals, bridged entertainment and instruction. Cooke wrote with that readership in mind, combining plain language with precise terminology and illustrations. *Fungi: Their Nature and Uses* exemplifies the Victorian pedagogical ethos: to educate a broad public without diluting scientific standards, and to connect household, field, and workshop to contemporary laboratory knowledge.

Taxonomy provided the scaffolding for such communication. Building on Elias Magnus Fries's early nineteenth-century systematics and Miles Joseph Berkeley's *Outlines of British Fungology* (1860), British mycology matured rapidly. Cooke's own *Handbook of British Fungi* (1871) had just consolidated descriptions and keys for local

species. Meanwhile, post-Darwinian debates sharpened attention to variation, adaptation, and relationships, even as nomenclatural rules were still being stabilized. In this context, *Fungi: Their Nature and Uses* presents morphology and life histories as intelligible patterns, not mere curiosities. It reflects the Victorian confidence that careful classification—tested by microscopy and field practice—could tame complexity and enable reliable identification.

Industrial and domestic life gave fungi immediate relevance. Brewing, baking, and cheese production depended on yeasts and molds, while vinegar manufacture and retting illustrated microbial transformations valued by chemists and entrepreneurs. At the same time, “dry rot” in timber (*Serpula lacrymans*), smuts, and mildews posed threats to houses, ships, and harvests, intertwining biology with sanitation and building science in urban Britain. Cooke’s volume channels this pragmatic spirit: it weighs hazards against benefits, encourages informed vigilance rather than alarm, and advocates empirical scrutiny. In doing so, it crystallizes a Victorian ideal—knowledge as a tool for stewardship—while helping to institutionalize mycology as a public science.

FUNGI: THEIR NATURE AND USES

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THEIR NATURE, USES, INFLUENCES, ETC.

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NATURE OF FUNGI.

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The most casual observer of Nature recognizes in almost every instance that comes under his notice in every-day life, without the aid of logical definition, the broad distinctions between an animal, a plant, and a stone. To him, the old definition that an animal is possessed of life and locomotion, a plant of life without locomotion, and a mineral deficient in both, seems to be sufficient, until some day he travels beyond the circuit of diurnal routine, and encounters a sponge or a zoophyte, which possesses only one of his supposed attributes of animal life, but which he is assured is nevertheless a member of the animal kingdom. Such an encounter usually perplexes the neophyte at first, but rather than confess his generalizations to have been too gross, he will tenaciously contend that the sponge must be a plant, until the evidence produced is so strong that he is compelled to desert his position, and seek refuge in the declaration that one kingdom runs into the other so imperceptibly that no line of demarcation can be drawn

between them. Between these two extremes of broad distinction, and no distinction, lies the ground occupied by the scientific student, who, whilst admitting that logical definition fails in assigning briefly and tersely the bounds of the three kingdoms, contends that such limits exist so positively, that the universal scientific mind accepts the recognized limit without controversy or contradiction.

In like manner, if one kingdom be made the subject of inquiry, the same difficulties will arise. A flowering plant, as represented by a rose or a lily, will be recognized as distinct from a fern, a seaweed, or a fungus. Yet there are some flowering plants which, at first sight, and without examination, simulate cryptogams, as, for example, many *Balanophoræ*, which the unscientific would at once class with fungi. It is nevertheless true that even the incipient botanist will accurately separate the phanerogams from the cryptogams, and by means of a little more, but still elementary knowledge, distribute the latter amongst ferns, mosses, fungi, lichens, and algæ, with comparatively few exceptions. It is true that between fungi and lichens there exists so close an affinity that difficulties arise, and doubts, and disputations, regarding certain small groups or a few species; but these are the exception, and not the rule. Botanists generally are agreed in recognizing the five principal groups of Cryptogamia, as natural and distinct. In proportion as we advance from comparison of members of the three kingdoms, through that of the primary groups in one kingdom, to a comparison of tribes, alliances, and orders, we shall require closer observation, and more and

more education of the eye to see, and the mind to appreciate, relationships and distinctions.

We have already assumed that fungi are duly and universally admitted, as plants, into the vegetable kingdom. But of this fact some have even ventured to doubt. This doubt, however, has been confined to one order of fungi, except, perhaps, amongst the most illiterate, although now the animal nature of the *Myxogastres*^[1] has scarcely a serious advocate left. In this order the early condition of the plant is pulpy and gelatinous, and consists of a substance more allied to sarcode than cellulose. De Bary insinuated affinities with *Amœba*,^[A] whilst Tulasne affirmed that the outer coat in some of these productions contained so much carbonate of lime that strong effervescence took place on the application of sulphuric acid. Dr. Henry Carter is well known as an old and experienced worker amongst amoeboid forms of animal life, and, when in Bombay, he devoted himself to the examination of the *Myxogastres* in their early stage, and the result of his examinations has been a firm conviction that there is no relationship whatever between the *Myxogastres* and the lower forms of animal life. De Bary has himself very much modified, if not wholly abandoned, the views once propounded by him on this subject. When mature, and the dusty spores, mixed with threads, sometimes spiral, are produced, the *Myxogastres* are so evidently close allies of the *Lycoperdons*, or Puffballs, as to leave no doubt of their affinities. It is scarcely necessary to remark that the presence of zoospores is no proof of animal nature, for not only do they occur in the white rust (*Cystopus*), and in such moulds as *Peronospora*,^[B] but are

common in algæ, the vegetable nature of which has never been disputed.

There is another equally important, but more complicated subject to which we must allude in this connection. This is the probability of minute fungi being developed without the intervention of germs, from certain solutions. The observations of M. Trécul, in a paper laid before the French Academy, have thus been summarized:—

1. Yeast cells may be formed in the must of beer without spores being previously sown.
2. Cells of the same form as those of yeast, but with different contents, arise spontaneously in simple solution of sugar, or to which a little tartrate of ammonia has been added, and these cells are capable of producing fermentation in certain liquids under favourable conditions.
3. The cells thus formed produce *Penicillium* like the cells of yeast.
4. On the other hand, the spores of *Penicillium* are capable of being transformed into yeast.

[C] The interpretation of this is, that the mould *Penicillium* may be produced from a sugar solution by “spontaneous generation,” and without spore or germ of any kind. The theory is, that a molecular mass which is developed in certain solutions or infusions, may, under the influence of different circumstances, produce either animalcules or fungi. “In all these cases, no kind of animalcule or fungus is ever seen to originate from preexisting cells or larger bodies, but always from molecules.” [D] The molecules are said to form small masses, which soon melt together to constitute a globular body, from which a process juts out on one side. These are the so-called *Torulæ*, [E] which give off buds which are soon

transformed into jointed tubes of various diameters, terminating in rows of sporules, *Penicillium*, or capsules containing numerous globular seeds, *Aspergillus (sic)*.

This is but another mode of stating the same thing as above referred to by M. Trécul, that certain cells, resembling yeast cells (*Torula*), are developed spontaneously, and that these ultimately pass through the form of mould called *Penicillium* to the more complex *Mucor* (which the writer evidently has confounded with *Aspergillus*, unless he alludes to the ascigerous form of *Aspergillus*, long known as *Eurotium*). From what is now known of the polymorphism of fungi, there would be little difficulty in believing that cells resembling yeast cells would develop into *Penicillium*, as they do in *fact* in what is called the "vinegar plant," and that the capsuliferous, or higher condition of this mould may be a *Mucor*, in which the sporules are produced in capsules. The difficulty arises earlier, in the supposed spontaneous origination of yeast cells from molecules, which result from the peculiar conditions of light, temperature, &c., in which certain solutions are placed. It would be impossible to review all the arguments, or tabulate all the experiments, which have been employed for and against this theory. It could not be passed over in silence, since it has been one of the stirring questions of the day. The great problem how to exclude all germs from the solutions experimented upon, and to keep them excluded, lies at the foundation of the theory. It must ever, as we think, be matter of doubt that all germs were not excluded or destroyed, rather than one of belief that forms known to be developed day by day from

germs should under other conditions originate spontaneously.

Fungi are veritably and unmistakably plants, of a low organization, it is true, but still plants, developed from germs, somewhat analogous, but not wholly homologous, to the seeds of higher orders. The process of fertilization is still obscure, but facts are slowly and gradually accumulating, so that we may hope at some not very distant period to comprehend what as yet are little removed from hypotheses. Admitting that fungi are independent plants, much more complex in their relations and development than was formerly supposed, it will be expected that certain forms should be comparatively permanent, that is, that they should constitute good species. Here, also, efforts have been made to develop a theory that there are no legitimate species amongst fungi, accepting the terms as hitherto applied to flowering plants. In this, as in allied instances, too hasty generalizations have been based on a few isolated facts, without due comprehension of the true interpretation of such facts and phenomena. Polymorphism will hereafter receive special illustration, but meantime it may be well to state that, because some forms of fungi which have been described, and which have borne distinct names as autonomous species, are now proved to be only stages or conditions of other species, there is no reason for concluding that no forms are autonomous, or that fungi which appear and are developed in successive stages are not, in their entirety, good species. Instead, therefore, of insinuating that there are no good species, modern investigation tends rather to the establishment of good

species, and the elimination of those that are spurious. It is chiefly amongst the microscopic species that polymorphism has been determined. In the larger and fleshy fungi nothing has been discovered which can shake our faith in the species described half a century, or more, ago. In the Agarics, for instance, the forms seem to be as permanent and as distinct as in the flowering plants. In fact, there is still no reason to dissent, except to a very limited extent, from what was written before polymorphism was accredited, that, "with a few exceptions only, it may without doubt be asserted that more certain species do not exist in any part of the organized world than amongst fungi. The same species constantly recur in the same places, and if kinds not hitherto detected present themselves, they are either such as are well known in other districts, or species which have been overlooked, and which are found on better experience to be widely diffused. There is nothing like chance about their characters or growth[1q]."[F]

The parasitism of numerous minute species on living and growing plants has its parallel even amongst phanerogams in the mistletoe and broom-rape and similar species. Amongst fungi a large number are thus parasitic, distorting, and in many cases ultimately destroying, their host, burrowing within the tissues, and causing rust and smut in corn and grasses, or even more destructive and injurious in such moulds as those of the potato disease and its allies. A still larger number of fungi are developed from decayed or decaying vegetable matter. These are found in winter on dead leaves, twigs, branches, rotten wood, the remains of herbaceous plants, and soil largely charged with

disintegrated vegetables. As soon as a plant begins to decay it becomes the source of a new vegetation, which hastens its destruction, and a new cycle of life commences. In these instances, whether parasitic on living plants or developed on dead ones, the source is still vegetable. But this is not always the case, so that it cannot be predicated that fungi are wholly epiphytal. Some species are always found on animal matter, leather, horn, bone, &c., and some affect such unpromising substances as minerals, from which it would be supposed that no nourishment could be obtained, not only hard gravel stones, fragments of rock, but also metals, such as iron and lead, of which more may be said when we come to treat of the habitats of fungi. Although in general terms fungi may be described as "hysterophytal or epiphytal mycetals deriving nourishment by means of a mycelium from the matrix,"[G] there are exceptions to this rule with which the majority accord.

Of the fungi found on animal substances, none are more extraordinary than those species which attack insects. The white mould which in autumn proves so destructive to the common house-fly may for the present be omitted, as it is probably a condition of one of the *Saprolegniei*, which some authors include with fungi, and others with algæ. Wasps, spiders, moths, and butterflies become enveloped in a kind of mould named *Isaria*, which constitutes the conidia of *Torrubia*, a genus of club-shaped *Sphæriæ* afterwards developed. Some species of *Isaria* and *Torrubia* also affect the larvæ and pupæ of moths and butterflies, converting the whole interior into a mass of mycelium, and fructifying in a clavate head. It has been subject for discussion whether

is an early developmental structure described in 19th-century mycology.

32 An older grouping of aquatic 'fungal' organisms (including Saprolegnia); these are now usually treated as oomycetes or water-moulds rather than true fungi, and are known for oogonia and oospores in their sexual cycle.

33 Minute non-motile reproductive bodies described in many fungi and fungus-like organisms; historically regarded as 'male' spores or spermatozoids in some accounts, their exact sexual role was debated and remains context-dependent.

34 Refers to the 19th-century French mycologists commonly called the Tulasne brothers (Louis René and Charles Tulasne), who produced influential microscopic and taxonomic studies on fungal development and life-cycles.

35 A species of rust fungus (stem rust) that infects cereals such as wheat and rye; it has a complex life-cycle with multiple spore types and historically caused major crop damage, with an alternate host often involving barberry (*Berberis*).

36 A common mould species often found on preserved fruits and stored foods; it produces chains of conidia (asexual spores) visible as a greenish, dusty coating and may also form sexual structures under certain conditions.

37 A 19th-century biological term used here for the living, granular material filling cells (now understood as cytoplasm plus nuclear contents); modern cell biology typically distinguishes cytoplasm and nucleoplasm rather than using a single term.

38 Montagne refers to Jean Pierre François Camille Montagne (1784–1866), a French botanist and mycologist who described many fungal species from Europe and abroad.

39 The late Professor Ørsted of Copenhagen denotes a 19th-century Danish botanist who worked on fungi (most likely Anders Sandøe Ørsted, 1816–1872) and reported experimental observations on rusts and related fungi.

40 The term teleutospores is an older name for the thick-walled, overwintering spores produced by rust fungi; in modern mycology these are usually called teliospores.

41 Fly Agaric is the common name used here for *Agaricus muscarius*, the mushroom now usually placed as *Amanita muscaria*, recognizable by its red cap with white warts and known to be poisonous and psychoactive in some preparations.

42 *Peronospora infestans* is the historical name used in the text for the organism causing potato late blight; it is today placed in the oomycete genus *Phytophthora* (*Phytophthora infestans*) and was responsible for major 19th-century crop epidemics, including the Irish potato famine in the 1840s.

43 A 19th-century scientific name given here to the powdery mildew of hops (author cited as Lév. for Léveillé); in modern mycology the genus is usually rendered *Sphaerotheca* and encompasses powdery-mildew fungi.

44 The historical name for the fungus responsible for the disease called “black knot” on plum and cherry trees; in contemporary taxonomy this pathogen is generally referred

to as *Apiosporina morbosa* (syn. *Dibotryon morbosum*), which produces dark, swollen galls on branches.

45 A commercially sold 19th-century disinfectant and fungicidal preparation known as Condy's Fluid; formulations commonly contained oxidizing agents (for example potassium permanganate or related compounds) and were used as general antiseptics and cleaners for plants and surfaces.

46 Refers to the 19th-century botanist/cryptogamist Westendorp, author of *Les Cryptogams après leurs stations naturelles* (cited in the text), who published studies of the natural habitats of cryptogamic plants and fungi.

47 An historical mycological grouping used in 19th-century literature to classify certain perithecium-bearing fungi; modern mycological taxonomy no longer uses this exact rank or name and has redistributed these species among different families and orders.

48 A sclerotium is a compact, hardened mass of fungal mycelium (plural sclerotia) that can survive adverse conditions and later germinate to produce fruiting bodies; the term is used in both historical and modern mycology for these resting structures.

49 A historical name for a chronic subcutaneous fungal infection (now usually called mycetoma) first described in parts of India, named after Madura (Madurai); it denotes a progressive, often localized disease of the foot caused by fungi or filamentous bacteria.

50 The phrase refers to Theodor Magnus Fries (1832–1913), a Swedish mycologist and son of Elias Magnus Fries,

who contributed to mycological studies in the mid-19th century.

51 Colonial name for the island now known as Sri Lanka; this name was used during British rule and remained in common use until the country adopted the name Sri Lanka in 1972.

52 Historic name for the island presently called Tasmania (off the south coast of Australia); the name was commonly used in the 18th and 19th centuries and was largely replaced in the mid-19th century.

53 An older taxonomic name (using the Latinized spelling *Sphæria*) for small ascomycete fungi historically placed in the genus *Sphaeria*; many species originally called *Sphaeria herbarum* have been reassigned in modern mycology, so the exact current name can vary by specimen.

54 A 19th-century name for the familiar 'wood-ear' or 'Jew's ear' fungus; modern taxonomy usually places this species in the genus *Auricularia* (commonly cited as *Auricularia auricula-judae*).

55 A section of Joseph Dalton Hooker's mid-19th-century botanical work (part of his *Flora Antarctica*) documenting cryptogamic plants and fungi collected during the Antarctic voyage of James Clark Ross, published in the 1840s–1850s.

56 A late-19th-century set of short popular scientific monographs published by D. Appleton & Co., organized to present recent research to general readers and featuring contributions from prominent European and American scientists.

57 Edward L. Youmans (1821–1887) was an American scientific promoter and publisher who organized the