MYCOLOGY AS A BRANCH OF NATURE-STUDY.

By John Frederick Rayner.

By way of preface to a plea for Mycology as a branch of Nature-study, it may be well to say a word about Nature-study itself. The rush to the towns, that portentous phenomenon of these latter days, has had far-reaching consequences, mostly bad. I do not forget that civilization, as the very word implies, came from town life, but civilization, like other things, may be bought at too high a price. Many observers are becoming alarmed about it. So lately as 1850 at least half of our population were engaged in agricultural pursuits, but now—we have it on the authority of one who cannot at any rate be called an alarmist, the Duke of Devonshire—77 per cent. labour, or do not labour, in the towns. Small wonder if so immense a transmigration should call forth the warnings of our modern Cassandras. It is the subject of anxious discussion at Church Congresses, at May Meetings, at Medical Association gatherings, in Parliament itself. It is declared to be laden with all manner of evils, physical, mental, moral and economic. The doctors tell us we are degenerating for want of pure air, our boasted sanitary improvements to the contrary notwithstanding. They say that one out of every five is tuberculous, that our jaws and our lungs are shrinking, our hair and teeth leaving us, our nerves shattered, the percentage of suicides increasing year by year; and as for lunacy, a problem of the near future will be the housing of the mentally afflicted. Some point to the declining birth-rate as a sign of national decay; others remind us that in spite of successive lowerings of the recruiting standard, sixty per cent. of candidates for military service have to be rejected as physically unfit. Our spiritual guides lament the frivolity of the age, the craving for change and excitement, the sensational and scrappy press, the garish and crowded public-house, the monstrous “gates” for professional football. Our politicians are aghast at the decay of agriculture, the lack of labourers, the inertia and want of enterprise on the part of those who still remain on the land, while the problem of the urban unemployed impels to novel and revolutionary legislation. But the Unemployed Act is fortunately only one of many signs of counteraction: witness the Garden City movement, the fashion

of holidays under canvas, the agricultural colonies of the Salvation and Church Armies, the enormous vogue of Pastor Wagner's "Simple Life," the great multiplication of books and periodicals dealing with gardening, botanical and rural topics, and last, but not least, the adoption of Nature-study in our schools. Now some of these evils may be exaggerated, some of the remedies futile, but we may claim this for Nature-study, that it gives at least a hint to the rising generation that there are other objects of interest in the world besides those which towns afford. It stimulates a love for the things of the country without which it were vain to hope that our people will be persuaded to retrace their steps countrywards. But I waste time in preaching to the converted. Nature-study has come to stay, and you and I are glad. My business this evening is to impress upon schoolmasters and all concerned the claims of our own pet subject, Mycology to wit.

Nature-study as frequently, I might perhaps say generally taught, resolves itself into Botany, by reason chiefly of the greater accessibility of material than either Zoology or Geology can offer; and the botany of our schools and Nature-study classes is mostly restricted to the flowering plants, often indeed only to the more conspicuous of these—the grasses, sedges and rushes being frequently neglected, a neglect of which indeed not a few among older botanists are found guilty. Now I wish to show cause why these boundaries should be enlarged. I do not mean to infer that all possible work within these boundaries has been or is being done, but at any rate the study of the flowering plants is limited by the season, and that season is succeeded by the season of Cryptogams. On the arrival of the "glorious First" the Phanerogams can offer little that is fresh to the wandering gaze of the youthful botanist, unless it be materials for the study of seed-dispersal or specimens for the examination of abscission-layers—but now come troops of new and strange forms of plant-life. I put aside for the present the Mosses, the Lichens and the Algae. Their structure and life-history have indeed attractions of their own, but call for the regular use of the compound microscope, and are hardly, to my thinking, so well fitted to engage the attention of the young naturalist as are the larger Fungi. Besides the "infinite variety" in form and colour of the Fungi, besides the large size, the fleshy substance, and the exceeding beauty of very many of them: besides the suddenness of their appearance and the rapidity of their growth, there is their strange and mysterious character. The student learns that there are plants without leaves, roots or flowers, plants devoid of that distinctive characteristic of plant-life, chlorophyll—a group unique on that account. He finds himself dealing with structures whose cell-formation proves their kin-

ship with his familiar friends the flowering plants, and yet which feed, as he himself feeds, on matter previously organised. Such a revelation, which all who have acquired the first elements of biology may receive, cannot but enlarge his conceptions of the vast hierarchy of Nature. But short of this, the youngest, the most thoughtless, will find something pleasurable in noting the obvious external features of Fungi: the plan of their multifarious forms, the meaning of their different parts, and the system of their classification. When one hears, as is not infrequently the case, some naïve expression of astonishment that these queer fragile objects which spring up at our feet for no other purpose it would seem than to offer a mark for a slashing walking-stick, have each and all of them a name and a place in the universe as definite if not as important as that of the heedless destroyer, one begins to recognise that Mycology has in it something of almost ethical import.

Then there is their edibility. From ethics to gastronomics is somewhat of a descent perhaps, but the appeal of the palate is not to be altogether disregarded, and may even bear its own particular lesson: new foods may lead to a reconsideration of the whole question of foods and feeding, which some say we English stand in great need of. Be that as it may, people are quite ready to listen when one talks of the toothsome savours and wholesome qualities of the edible Fungi. Not that they are always so ready to try them; they have heard of the poisonous species, and, like certain—shall we say mythical?—beings, “they believe and tremble.” But after an experiment on the vile body—of the teacher, I mean—seeing him eat fungus and not thereafter incontinently expire with his feet in his armpits, they gather courage, taste, and are converted. This I say from an instructive if brief experience. For my part I cannot help talking about Fungi whenever I can get anyone to listen, and I find the culinary and esculent aspects of Mycology will generally command attention—and not only that side of the subject either, but afterwards at any rate, the more scientific side, and that which lends itself to Nature-study. Among sundry public discourses in which I have tested the attractions of Fungi, there was one I delivered—pardon this egotism, it illustrates the subject—to our Southampton Elementary Schools Head Teachers’ Association, and they evinced no little professional interest in it. You see here some diagrams and figures which I made for the occasion. I do not disguise from myself that they are not exactly brilliant from the point of view of executive faculty or artistic merit—but here let me interject that I had, among other *pièces de conviction*, a large and varied assortment of spore-maps which came in for much wondering inspection and remark, especially when I smeared them with my finger to

prove them real, and not the product of the paint-brush or the printing press. As for the text of my lecture, which I compiled with a tyro's temerity, I fear it was no great thing either; yet the fact remains that the schoolmasters behaved as though they were more than commonly interested. So it was also with a gathering of students in training, and other audiences of the usual type of local scientific societies. My small experience, then, shows that Mycology is a very attractive topic, even when presented by an advocate so poorly equipped as your humble servant; handled by masters of the subject, such as are here to-night, it will, I feel assured, be found a popular and useful branch of Nature-study. Useful I think in a high degree if it can be made to help, in soever small degree, to open the eyes and minds of the young to the things of country life. I am not indeed unmindful, as I said at the beginning, of the good that has come and does still come from the life of the town. Liberty and learning had their birthplace within its walls. But town-life has, or is beginning to have, its drawbacks and its dangers—exaggerated in some quarters though we deem them to be—and at the very least we may urge that Mother Earth has more in her lap than the pavements can yield or the gas-lamps discover. We would persuade the rising generation that the hedgerow should not be altogether abandoned for the shop-window, or the hillside be forsaken for the music-hall. We would say to the young people that the country is full of interest and charm, that they will find the study of Nature fraught with a sweet and abiding refreshment, and finally that among Nature's rich store-houses there is one chamber, often unopened, but well worthy of at least a passing glimpse, full to the door of things quaint, curious and beautiful—the Fungus Flora of our native land.