

of tissue from the prostatic urethra in each of these cases, and careful study has failed to disclose evidence of carcinoma. The tissue removed at the original operation has been studied again and is definitely carcinomatous. It seems possible that in these two cases a real cure was accomplished by transurethral resection."

There were two other cases in my group which I think deserve emphasis. Each was also living after a lapse of three years and may still be, for all that I know, for they have been dropped from the follow-up.

Repeating a practice initiated by Drs. Thompson and Emmett in their study of the results of transurethral resection in cases of cancer of the prostate, I asked Doctor Broders to review the tissue removed at the time of resection in all cases still living after three years. In two of the twelve cases living over this period, he found the original diagnosis to be in error. The tissue that had been removed in 1933 and reported malignant was, in fact, benign. Except for this careful recheck, I might have had the pleasure of reporting five instead of three patients living over five years, and possibly that three of my resections instead of one had survived over seven years.

It seems to me quite within the realm of possibility that other reported cases of cures which one reads in the literature may be due to similar honest errors on the part of the pathologist who first examined the tissue.

We all know this was true in the first large series of radical cures of cancer of the breast reported by Halstead, which, upon review of the tissue by Bloodgood, were pronounced in a goodly minority to be benign.

Not many years ago the professor of urology of one of the largest midwestern state universities confided to me that the incidence of malignancy of the prostate in his cases of transurethral resection was in excess of 30 per cent. I suggested that he send some of the slides to Doctor Broders for confirmation and the error was corrected. It seems a well-established fact, from figures of various urological clinics, that the incidence of cancer of the prostate is between 15 and 20 per cent.

I doubt if too great an emphasis can be placed on this possible source of error in diagnosis. Certainly, I feel sure few would have questioned my honesty if I had included these two cases just referred to with the other three who survived over five years. In so doing, I could, in all honesty, have reported a 10 per cent of five-year controls of cancer of the prostate by transurethral resection, all proved by microscopic examination at the time of operation; end-results statistically the equal of any form of treatment of cancer of the prostate in unselected cases.

That transurethral resection for cancer of the prostate has unquestionably prolonged the lives of these unfortunate individuals, seems indicated beyond question of a doubt, for ten of the group outlived the average duration of the disease, measured from its first symptoms to death, in spite of the fact that, in many cases, it was already con-

siderably advanced at the time of resection. Nine of the group survived less than a year following the operation, but none died as a result of an attempt to cure them. There was no operative mortality.

It has been believed for a considerable time that cancer of the prostate, with a few rare exceptions, originated in the posterior lobe. As this lobe is not removed by transurethral resection, some have logically argued that resection was contra-indicated when malignancy of the gland was suspected. Some have gone as far as to hold that, inasmuch as every fifth case of prostatic enlargement would prove to be malignant, that resection verged upon malpractice.

Fortunately, the investigation of Kahler, referred to earlier, showed that only in the median lobe did he never find carcinoma changes originating, and that its incidence in the posterior lobe was a little less than in the laterals. Comforting findings for those who believe palliative rather than curative surgery is indicated in this disease.

True, over twenty of these thirty-four patients succumbed within two years of their resection; but they had been relieved of their urinary difficulties considers that they were unselected cases, and that only four others died during the third year, I think it may be asserted without fear of contradiction that transurethral resection offers to the vast majority of patients with cancer of the prostate a method of treatment devoid of great risk; free of discomfort, and which leaves them in possession of their normal physiologic function.

College of Medical Evangelists.

POWDERY MILDEWS AS ALLERGENS*

VERNON G. ALDERSON, M. D.

Oakland

AND

LUCILE R. MASON, Ph. D.

Mills College

THE failure of some hay fever and asthma patients who are sensitive to pollens to react to treatment has long puzzled allergists. That their sensitivity might be due to plant spores other than pollens was not for many years suspected. In the spring of 1939, during a routine study of the deposits on pollen slides exposed daily at various stations on the Mills College Campus, at Oakland, California, an unknown type of spore occurred in great numbers. Careful study of the surrounding vegetation revealed that the source of these spores was a powdery mildew *Microsphaera Alni* (Wallr.) Wint. growing upon the leaves of the Valley Oak (*Quercus lobata* Nee). In the light of seasonal occurrence of these spores it seemed desirable to test certain individuals with an extract prepared from them. Spores were collected and an extract of their atopens was made with Coca's solution, under the supervision of Dr. Robert K. Cutter at the Cutter Laboratories in Berkeley, California.

* From the Department of Allergy of the Oakland Clinics and the Department of Botany and Bacteriology, Mills College, Oakland.

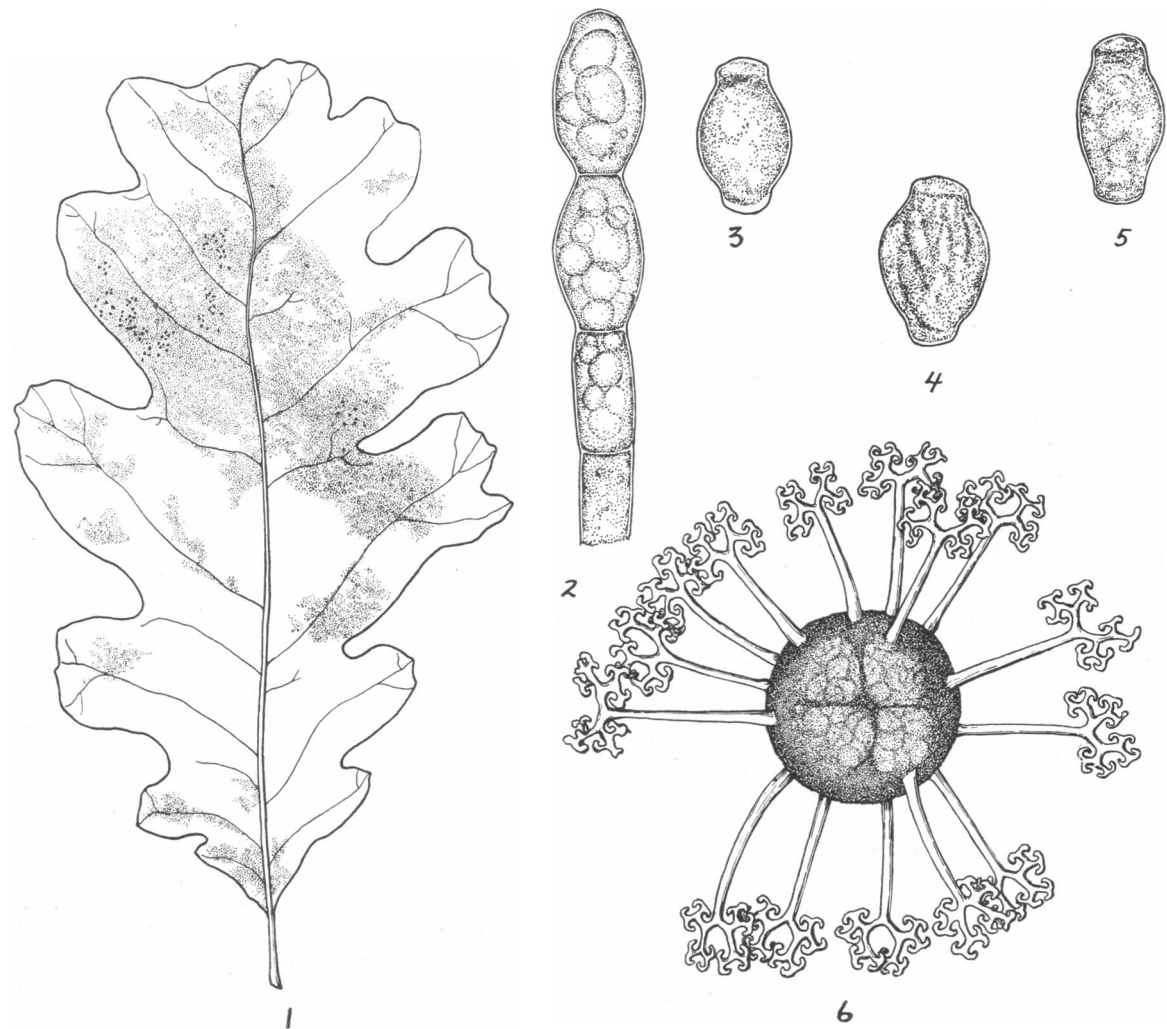


Fig. 1.—Leaf of *Quercus agrifolia* Née, showing mycelium and perithecia. x 1.
Fig. 2.—Conidiophore, with conidiospores being formed. x 600.

Figs. 3, 4, and 5.—Conidiospores. x 600.
Fig. 6.—Perithecium, showing branched appendages. x 900.

CLINICAL MATERIAL

One hundred cases were chosen which showed seasonal symptoms and were known to be sensitive to pollen. The reactions were traced upon cellophane paper and the results are here recorded in Table 1.

The positive reaction to the controls may have been due to the patient's sensitivity to Coca's solution.

Relatively little experimental evidence is available with respect to the part which fungi may play

as allergens. Undoubtedly among the active agents in house dust are the spores of such a fungus as *Rhizopus nigricans*, the common black mold of bread. These spores are so abundant that they usually overgrow everything else on culture plates of house dust. A few of the more common molds, such as *Penicillium*, *Aspergillus*, etc., as well as certain other fungi, have been tested clinically and have given some positive results.

DISTRIBUTION

The large and widespread family Erysiphaceæ, members of which are commonly known as mildews, blights and powdery mildews, has not previously been studied from the point of view of its allergic potentialities. The family belongs to the order Perinosporiales of the Ascomycetes. Its members are all strictly parasitic upon plants. The species are numerous and closely related. Common genera are *Sphærotheca*, *Erysiphe*, *Phyllactinia*, *Uncinula*, *Podosphæra* and *Microsphæra*.

Geographically the powdery mildews are widespread, being particularly abundant in the north temperate zone but occurring from Greenland to

TABLE 1.—Reactions in One Hundred Cases

Number of cases giving 4+ reaction to <i>Microsphæra</i> Alni extract	4
Number of cases giving 3+ reaction to <i>Microsphæra</i> Alni extract	25
Number of cases giving 2+ reaction to <i>Microsphæra</i> Alni extract	23
Number of cases giving 1+ reaction to <i>Microsphæra</i> Alni extract	13
Number of cases giving no reaction	34
Doubtful	1
Total positive reactions	65
Of the controls 89 gave negative results	
10 gave some reaction	
1 was doubtful	

the temperate regions of South America. They attain their best development during the moist periods of the year but they are by no means restricted to humid regions.

HOSTS

The number of known hosts to these parasitic fungi is continually increasing and 2,000 host species is probably a conservative estimate. Some idea of the wide variety of hosts may be obtained from the following very incomplete list, many of which are of economic and horticultural importance: alder, apple, bean, Boston ivy, barberry, birch, clover, *Coreopsis*, cucumber, currant, dandelion, dahlia, elm, elderberry, Euonymus, Gaillardia, grape, hop, honeysuckle, lupine, marigold, mustard, maple, oak, peach, phlox, pear, pea, poplar, rose, strawberry, tobacco, violet, verbena, willow and walnut, as well as numerous species of grass.

GENERAL CHARACTERISTICS

Many species of these fungi are known to occur in great abundance, and they all have the same general characteristics. The vegetative portion of mycelium is, with few exceptions, superficial to the host, often forming a white or hyaline, felt-like mass over the surface of leaves and young stems. Simple or lobed haustoria enter the stomata or other vulnerable points of the host, and through these the fungus absorbs nourishment. The mycelium is branched and made up of uninucleate cells.

Reproductive bodies produced in the spring and early summer are to be found in large numbers. They are simple, one-celled structures formed in chains on scattered conidiophores (Fig. 2). There is so little morphological difference between the conidiospores (Figs. 3, 4, and 5) of the various species of powdery mildews that these are of little value in their identification. They are usually barrel- or egg-shaped. Under proper conditions of moisture and temperature they will germinate almost immediately, producing a new mycelium and another crop of conidiospores within a few days. These masses of mycelia, with their conidiophores and conidiospores, cause the powdery spots on the leaf surface (Fig. 1). Under proper environmental conditions the conidiospores are released into the air in enormous numbers. They are small, 65-80 μ in diameter by 130-150 μ in length, and are readily carried by air currents.

Genera and species in the family are distinguished not so much by the conidial characters as by the type of perithecia (Fig. 6) or resting structures resulting from sexual reproduction. They are produced in the fall and appear as black or dark brown spheres just visible to the naked eye. They may occur in abundance. Within them are produced the ascospores which carry the fungus over the unfavorable growing season. *Microsphaera Alni* may be distinguished from all other powdery mildews by the intricately branched appendages (Fig. 6) on the perithecium.

In November, 1939, perithecia in abundance were found on the same oak trees which had produced

conidiospores in the spring. The leaves were not yet shed, and the relatively thin white mycelium and many black appendaged perithecia were scattered over the upper leaf surface (Fig. 1). The spores of these fungi may be the cause of many of the baffling and unexplained allergic cases which so frequently appear. The millions of readily dispersible conidiospores produced by a single infection and the great abundance of the fungi of this group on a wide variety of hosts render these plants ideal as a causative agent of asthma and hay fever.

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400 Twenty-Ninth Street.
Mills College.

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COMMON DUCT LESIONS: THEIR SURGICAL MANAGEMENT*

L. A. ALESEN, M. D.
Los Angeles

IT is not the purpose of this paper to present any startling innovation in the management of lesions of the common duct, however much that might be desired. Rather, it is the intent to focus attention upon the fact that we are at present in possession of sufficient information and have at our disposal adequate technical procedures to permit of a somewhat standardized approach to this admittedly difficult field with a view toward the material improvement of our end-results.

Recent advances in our knowledge concerning the normal and abnormal physiology of the liver, the cause and prevention of cholemic bleeding, renewed interest in the hepatorenal syndrome, as well as a realization that the malignant lesions affecting the common duct may be successfully attacked by the same principles of early diagnosis and radical extirpation as are successful in the treatment of cancer elsewhere about the body, have all combined to generate a more optimistic spirit than formerly prevailed.

CLASSIFICATION

Since the ultimate effect of common-duct lesions is to encroach upon or obliterate the lumen of the duct and thus interfere with its function of carrying bile from liver to duodenum, these lesions may be classified as (1) those causing pressure from without, (2) those causing pressure from within the lumen, and (3) those arising within the wall of the duct itself.

Of lesions causing pressure from without, carcinoma of the head of the pancreas is by far the

* From the Department of Surgery, College of Medical Evangelists, and the Surgical Service of the Los Angeles County General Hospital.

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