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AMONG THE CRYPTOGAMS.

By Prof. A. H. McKay.

PAPER VI — USES OF LICHENS.

Continued.

Many lichens contain principles which have made them popular in

MEDICINE.

In this department we find some of them used as nutriments, demulcents, febrifuges, astringents, tonic, purgatives or anthelmintics. Some of these properties have undoubtedly existed only in imagination, as for instance the "*pulvis antibyssus*," the celebrated "*pulvis contra rabiem*," or "mad dog powder," long regarded as a most efficacious remedy for Hydrophobia. This was nothing else than the powdered earlike lichen fronds often found growing over moss in the woods, and which was called from this belief *peptigera canina*. These powders had one grand property, if they did not cure, they did not kill. The lichens also furnish us with many

CHEMICAL COMPOUNDS

useful in the arts and sciences, such for instance as *ultramic acid*, *gallic* or *tannic acid*, *lichenine*, *innuline*, and especially such organic acids as *orcellic*, *lecanoric*, *gyrosphoric*, *evernic*, etc., which although themselves colorless, by the joint action of air, water and ammonia produce valuable

PURPLE DYES.

The coloring properties of these compounds made some lichens only a few years ago of very great economical importance. In their commercial form their coloring matters constitute the pigment known as *Orchill*, *Cudbear*, *Litmus*. These have all the same origin, the first being the English, the second the Scotch and the third the Dutch name. The first was manufactured as a liquid or paste, of rich purple color; the second as a crimson, or carmine powder, and the third in small cakes of an indigo-blue color. There is reason to believe that the dye mentioned in Ezekiel, XXVII, 7.—"Blue and purple from the isles of Elishah was that which covered them," and the celebrated "purple of Amorgas" were *Orchill*. Since the discovery of the aniline colors, the manufacture of dyes from lichens is not of the importance it formerly was. The annual value of a species of *Roccella*, or *Orchella*, as it was called, and other dye lichens imported into England, was estimated a few years ago at from \$300,000 to \$400,000. Some of these grew in England itself, but tropical species, from Africa, Asia and South America, and from the Azores and Canaries had been found more productive. The prices varied from \$100 to \$1000, to \$2000 and sometimes nearly to \$5000 per ton. In

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