Prospectus of the Biological Survey of Kansas.

By the Editor.

It is proposed to conduct, under the auspices of Washburn College, an informal biological survey of Kansas. The work has already been in progress for some months, and will probably require five, and perhaps ten, years for the accomplishment of its objects.

While the more popular portions of our fauna and flora, and particularly our birds, insects, and flowering-plants, have been studied by Profs. Snow, Popenoe and Carruth, Col. Goss, and others, no attempt has hitherto been made at a systematic survey of the entire field of Kansas botany and zoölogy. The work now proposed, while placing our State in a position where, as regards our knowledge of its natural history (geology excepted), it will compare well with its older sisters in the East, will present to science the facies of a typical prairie fauna and flora, will serve to define more clearly the relations of the Eastern, Central, Sonoran and Austroriparian faunal regions, and cannot fail to throw other important light upon the subject of bio-geography and variation.

We have said "geology excepted" because, while there are few States of whose geology, whether considered in its scientific or in its economic aspect, so little is known as of that of Kansas, it is neither part nor possibility of the present undertaking to include a State geological survey. Such a survey is imperatively needed, but is of too great magnitude for private enterprise, and its execution must be left to the State.

The object of the proposed survey is simply to investigate the fauna and flora of a State which, together with Indian Territory, holds the key to a more definite knowlege of the inter-relationship of four great faunal regions. It is believed that this object will commend itself to all intelligent and public-spirited citizens of the State; and the coöperation of such is invited in the collection and donation of specimens of mammals, reptiles, fishes, shells, insects, crustaceans, flowering plants, ferns, mosses, lichens, *Fungi*, *Algæ*, or, in short, of whatever lines of material can locally be collected to best advantage.

The progress of the survey will be recorded in the form of partial reports, or contributions and notes, which will come from specialists to whom the material brought together by the survey will be submitted.

Some of the departments are still unprovided for; but the names of the following eminent specialists, whose services have been secured, are a sufficient guarantee for the value of the proposed work: For the fishes, Prof. Chas. H. Gilbert, of Bloomington, Ind.; land-shells, Mr. Arthur F. Gray, of Danversport, Mass.; fresh-water shells, Prof. R. Ellsworth Call, of Des Moines, Ia.; mosses, Mr. Eugene Rau, of Bethlehem, Pa.; lichens, Mr. H. Willey, of New Bedford, Mass.; *Algæ*, Mr. Francis Wolle, of Bethlehem, Pa.; *Agaricini*, Prof. C. H. Peck, State Botanist of New York; lower *Fungi*, J. B. Ellis, of Newfield, N. J.

A considerable number of volunteer resident collectors and correspondents have already been secured in various parts of the State, and it is hoped that others may soon be added. The following points, as yet unprovided for by resident observers, are particularly important

stations; and we shall be glad to correspond with anyone who can represent these localities for the survey, or direct its attention to such as they think might be able to do so: (1) the Kansas shore of the Missouri River; (2) the Marais des Cygnes Valley, near the eastern State line; valley of (3) Spring, (4) Neosho, (5) Arkansas River, near the southern State line; (6) Medicine Lodge; (7) extreme southwestern Kansas; (8) Arkansas River Valley, near the west line of the State; (10) Republican Valley, near west line; (11) Norton county; (12) Blue River Valley, near the northern State line.

Correspondence is invited from all interested in the subject of natural history in Kansas. Communications and specimens relating to either the survey or the BULLETIN should be addressed to F. W. Cragin, Washburn College, Topeka, Kansas.

Circulars are in course of preparation, giving directions as to the manner of collection, preservation, and transmitting of specimens best calculated to subserve the objects of the survey; and these circulars will be forwarded to any address on application.

New Species of Fungi from Washington Territory. Collected by W. N. Suksdorf during the Summer and Fall of 1883.

BY J. B. ELLIS AND BENJAMIN M. EVERHART.

Puccinia asperior.—Æcidium and teleutospores. On *Ferula dissoluta*. June. (No. 86.)

The Æcidium occurs in dense clusters, distorting the petioles and the lobes of the leaf. Cups hemispheric or subangular by compression, ($\frac{1}{2}$–$\frac{3}{4}$mm.), margin suberect and finely toothed; spores orange, subglobose, 20—22μ in diameter, or oblong, 25—35×15—18μ. Teleutospores in black, subpulvinate, suborbicular or slightly elongated; sori mostly less than 1mm. in diameter, and for some time covered by the epidermis; spores elliptical, obtuse, and rounded at each end, scarcely constricted at the septum, 25—35×19—23μ, epispore coarsely warted, scarcely thickened above; pedicels apparently very short, but really as long as or longer than the spore, and easily breaking off.

Distinguished from *P. Smyrnii*, Cda., by its different Æcidium and black sori, and from *P. Jonesii*, Pk., by its coarsely warted spores, without any appearance of striæ.

Puccinia Angelicæ.—Uredo and teleutospores. Falcon Valley. August. (No. 24.)

Sori small ($\frac{1}{2}$–$1\frac{1}{2}$mm.), dark brown, soon naked, irregularly scattered over the under side of the leaf, which assumes a yellowish tinge around them. Uredospores subglobose or ovate, 30—35×24—30μ, epispore minutely roughened and distinctly thickened above; pedicels stout, 50—70×6—7μ, soon breaking off; teleutospores loosely packed, elliptical or ovate, 35—40×20—25μ, slightly constricted, upper cell generally broader, epispore thickly covered with rather small hemispherical