

### Preparing Students in Botany for Entering the Agricultural College or Any Other College.

For many years past, graduates of high schools have become members of my botany classes at the Agricultural College. It may interest teachers to know what I consider a few of the weak points in the preparation of students in this subject. Considering the time occupied, they attempt to cover too many topics, consequently are thorough in nothing; structural botany, morphology, seed plants, histology, physiology, ecology, classification, lichens, mosses, liverworts, club mosses, ferns.

In teaching zoology Agassiz placed very great stress on comparing two or more animals in detail—in homology, so much so that he named his collection a museum of comparative zoology.

Asa Gray placed equal importance on the same kind of study applied to plant morphology. Drill students in the comparison of the parts of plants. Be sure that your pupils know the following: Parts of a complete leaf, underground stems of quack grass, June grass, false Solomon's seal, how to distinguish a stem from a leaf, a compound from a simple leaf, the morphology of a leaf of pea, rose, clover, lilac; what is a potato, a spine of wild plum or hawthorne, spine of a barberry, leaves and branches of arbor vitae?

Wm. J. Beal.

### Meandering With Miller.

St. Joseph is one of Michigan's prairie counties. Here were once oak-openings, buffalo grazing ground and wallows. Here now are lordly oaks that were sizable trees when La Salle, the indomitable and intrepid, trudged his way athwart the wilds stretching between Detroit and Kaskaskia. Most of the county is level, and all of it exceedingly well watered by streams. The St. Joseph is a lordly and beautiful river in its course.

It is an old and well-settled county, well supplied with thrifty and pretty villages, rich farms, comfortable and attractive homes, and a hospitable and happy people. Yet this was part of the territory that Governor Tiffin of Ohio reported years ago as "mostly swamps and sand dunes, and would never be inhabited except by wild beasts and wilder savages."

Commr. Miller had planned an institute on wheels for his county during the week of Oct. 7-12, beginning at Colon. When "Pat" rolled in on the Air Line Monday noon, rain was coming down by the bucketful. It had been raining for some time and kept it up for much more time. Miller was

at the train, the planets came in conjunction, and troubles began for St. Jo.

From that time till Saturday p. m. those lame ducks had no time to black their shoes. We visited 41 schools and addressed 211 teachers, 1,314 pupils, 656 patrons and traveled 150 miles with horse and carriage. Colon, Leonidas, Mendon, Parkville, Moorepark, Howardsville, Constantine, White Pigeon, Sturgis, Burr Oak, Centerville, and Three Rivers were the chief points, while district schools galore got a song service, a quiz, and a short speech.

Not all chickens enter the ministry. This boarding 'round will surely founder yours truly. Every township of the county save three was visited.

Burr Oak carried off the banner for evening meetings, though all were good, and well attended. Sturgis takes



COMMR. LEWIS E. MILLER, ST. JOSEPH COUNTY.

the prize for getting out patrons at the day session; for though the meeting was set at one o'clock, the fine session room of the high school was filled.

Schoolhouses are in good repair, clean, and for most part, neatly decorated. School appliances fair, but libraries not as a rule well selected nor containing enough good books suitable for the younger pupils. There were some brilliant exceptions, however.

Schoolhouses were usually tidy and well kept. In but one school was there noticeable disorder, and that but a slight symptom of "smart aleckism."

The "round-up" at Three Rivers for teachers was a most enjoyable and finely attended meeting. One teacher walked seven miles to attend it. If its loyal, appreciative, wholesome, and buoyant spirit is an index of St. Jo.

conditions, then "happy is the Miller" who presides o'er the county schools.

He's a Pennsylvania Dutchman, born Dec. 19, 1864. When but a child of five, an accident injured his left leg, and for four years he lived in a children's hospital in Philadelphia. When he was 14 years of age he was but 50 inches tall and weighed just 50 pounds. His people at that time had just moved to Michigan, settling on a St. Joseph county farm. Young Miller attended school in Three Rivers, working for his board, yet being obliged to use a crutch. Later we find him teaching school, and still later digging his way through Michigan Normal College. After graduation he taught the Royal Oak school, was superintendent at Birmingham, taught science in Howell high school, superintendent at Fowler, Colon, and Mendon, and six years ago was elected county school commissioner of St. Joseph county, to which position he was again chosen last spring for a four year term by a large majority. Mr. Miller has to use two crutches, but he is active, vigorous, jolly, sympathetic, clean, kind, and forceful. It is a striking example of will, grit, and gumption, overcoming a serious physical handicap. He is a fervent Methodist, a pretty respectable democrat, a great Sunday school man, an optimist, a lover of home and children, of which latter he has three.

We enjoyed immensely the strenuous week with Miller and his people—teachers, pupils, and patrons. He has many schools that should be consolidated and several townships that should establish high schools. Wages are improving, school sentiment steadily growing, and compulsory school law is enforced pretty thoroughly.

Our horse was one the commissioner had on probation—Miller's stand-by died sometime since. This one was a four-year-old bay, very toppy forward, but built like a pair of glove stretchers aft. It could take a 9-mile clip without any trouble and was almost equal to Morley B. Osborne's pony for slinging mud. It was kind and willing and showed his affection by wiping his nose on a port or starboard shoulder every time one tied or untied his tie strap. Its appetite equaled that of his cargo, and he came in under the wire on time to the minute, and apparently in good trim for another week.

But two rural schools had the flag flying. The percentage of attendance ranged above 90 and the last day's visits found every school with a perfect attendance. Schools responded well to the quizzes, and not quite half had been reviewed sufficiently on masterpiece selections for memorizing. Teachers should see to it that pupils