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GEOGRAPHY IN THE HIGH SCHOOL

By G. T. SURFACE

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[Professor Surface's article is a very pertinent contribution to the question discussed at length in recent numbers of the JOURNAL. It is hoped that other papers showing contrasted methods will appear later.—EDITOR]

THAT geography is coming into greater service and appreciation in both secondary and higher schools there can be no question. It is equally manifest that the subject is being successfully differentiated and adapted in colleges and universities to meet the needs of the various special departments, and of that small specialist class who seek advanced and systematic instruction in geography. That the subject will and must be taught in schools of every grade is so obvious as not to be open to discussion; but as to what phases of the science and how much of it shall be incorporated in the courses of the different grades is a most important problem for consideration. The problem has by no means been solved in its application to the higher institutions (colleges and universities); but it is further from solution in its application to secondary schools because of the greater difficulties encountered in adapting it to meet best the needs of these schools.

Since the most practical working basis can only be arrived at by an exchange of opinion and intelligent criticism, I venture to address myself briefly to the topic of Geography in the High School; the purpose, scope and character of the course which should be offered.

ITS PURPOSE

The purpose of the course is not to mold a certain number of consecutive cogs in a pedagogical wheel, but to supply additional spokes at different places in wheels of different size and strength, most of which will soon be required to do work of a widely diverse character. The students who enter the high school are, and must continue to be, a heterogeneous aggregation as to preparation, ability, opportunity and destiny. That it can be made less heterogeneous by the correlation and coöperation of the grammar grades I admit, and this is most desirable; but after the best is done toward unification or classification they will still represent runners on a wide track, varying in start, pace, endurance and desire. All are open to *stimulation*, *information* and *observation*, and each will respond to a different degree and in a different way to these three lines of influence and development. It is possible to emphasize any one to the exclusion and detriment of the other two. I believe without hesitation or compromise that

the geography course which will maintain with least retardation an equilibrium between these three phases of the instruction will be the best course. Geography as formerly taught in the public schools was largely *informational*. Observation was not considered essential. The creation of interest (or stimulation) may be traced largely to the personality and method of the teacher and the observation of the student. In the adaptation of the course for conserving the above ends it can only be effectively done by keeping constantly in mind the most fundamental, *causative* and useful elements of the science. The next problem is how to *present* it so as to fulfill the highest purpose and possibility of the course. I am convinced that the *useful* should be the unit basis for a constructive study of what is *causative* and fundamental.

ITS SCOPE

Geography is both a pure and applied science. It is a mathematical and natural science, and thus overlaps the sciences of earth, air and space. As based upon a detailed study of relations and results it is capable of differentiation, correlation and classification. This can not be done by a systematic arrangement of parts with reference to exact elemental sequence or scale, as can be done in mathematics and chemistry. Classification in geography is based upon *interpretation*, and this must depend upon the view point of the interpreter. It is for this reason that even the definitions are more or less tentative, as attested by the fact that the leading students of the subject are not yet agreed upon what shall be included in the divisions already recognized, and are more at variance as to the practicability of certain new divisions being recognized. These evolutionary processes on the side of methodology and systematization are necessary not only for determining what lies within the field of geography, but in a more important sense for coördinating the parts which are most essential to the students of secondary schools.

Of the students who enter the high schools of this country, less than five per cent. will make or take the opportunity for more advanced educational training, and the percentage of those who seek further systematic instruction in geography is fractional. It seems impracticable for regular high schools to offer more than one year in geography, and probably will continue so until there is an expansion of the elective system, or extension of the course. I am here speaking of *regular* high schools, and not commercial or technical high schools of any class or grade. The course in geography adapted to these schools is a separate problem, and belongs to a separate discussion. There are two conditions which will probably con-

tinue to limit the course to one year: first, the smaller city high schools need more urgently an improvement of the courses offered than extension of curriculum or privilege; second, the students of the larger cities have the option of attending the commercial and technical high schools, which makes it unnecessary for the regular high schools to offer specialized courses.

The short time allotted to the subject makes the quality and character of the course all the more important.

ITS CHARACTER

Some schools are offering a regular course in physical geography as prescribed by the recent text-books prepared for schools of secondary grade. Others give one-half year in physical geography and the other half is devoted to either commercial or industrial geography. In other words, as the course is offered now in most high schools, we might infer that the science of geography is as a multiple story house in which each division of the subject corresponds to a separate story or compartment; whereas, the truth is that each division of the science contains brick, mortar and clay of its distinctive type, suited to various parts of the building. Certain parts of each are suitable for foundation work, other parts for wall construction, and a few parts especially adapted to decoration. The teacher is both the architect and the builder. The strength, symmetry and beauty of the structure depends upon a wise *interpretation, selection, association and presentation*. I am therefore constrained to believe that the best high school course will be one which incorporates selected and correlated parts from *all the fields of geographic information*. I fancy some author will be heard to say: "My book conforms to that requirement." Most of the books do at least make mention of a few facts from other fields which are introduced as visitors at the end of each chapter. The day of text-books will not soon pass, if ever. A large percentage of the teachers will continue to be guided by them. I do not depreciate their value, nor attempt to teach without them. If it be true that those of high-school grade do not lead to the goal of most practical realization, it is our duty as teachers of geography in the high schools to apply the test by experiment, and publish results. In my own experience I have found that the interest is more easily commanded, the facts more readily retained and grouped, and the power of observation developed more naturally and more rapidly by outlining and prosecuting the study on a definite *regional* or *type-locality basis*; that is, the larger natural physiographic land divisions. These are so different in *appearance, structure, location, climate, production* and *people* as involuntarily to set up in the student's mind a train of inquiry as to the

multitude of causes which could result in contrasts so striking, harmonies so perfect, and responses so apparent as not to escape even an indifferent observer.

The student in this way will not only gain in interest by having the geographic factors and results definitely grouped with reference to the economic and commercial units, but the study of each type-region will put him in possession of information which will quicken and broaden his interpretative power in each succeeding region. Under the present system the teacher's greatest difficulty from the pedagogical side is to remove from the mind of the student the impression that geography is a science of an indefinite number of isolated facts. If I may add a personal experience in proof, they have remarked to me that I seem to be still a diligent student of geography, and if years of study are required for me, how can they be expected to get very much in one year. Instead of giving them the consolation that it is a great study which can not be mastered in a lifetime, I tell them that I am applying to the various parts of the world the information which they will get as to the United States, and should have added that I have found no country with a more interesting geography.

That for which I appeal in the high-school course is to change geography from an abstract study with selected concrete illustrations to a *concrete study*. The abstract study of mountain growth and organic processes is interesting in what it purports to tell the pupil, but is neither understood nor appreciated until approached from the constructive side, which necessitates first a study of growing coastal plains.

In my judgment a *coastal plain of marine deposition* is the fundamental and natural type area for initiating the study of either continents or oceans. Not only is it the most consistent starting point for the development of concepts as to *physical* processes and aspects, but is logically and historically the unit area for *economic* and *commercial* study. The following may serve as a tentative classification of the Atlantic Coastal Plain to illustrate the order and content of the course herein advocated.

ATLANTIC COASTAL PLAIN

Origin

- A. Changes of level—elevation and depression.
 - 1. Evidences.
 - 2. Causes.
 - 3. Effects of elevation.
 - a. Drainage.

- b. Increase in area.
 - c. Increase in length and work of rivers.
 - 4. Effect of depression.
 - a. Deposits.
 - b. Coastal indentations.
 - c. Harbors.
- B. River action.
 - 1. Location of rivers.
 - 2. Source of rivers.
 - 3. Size of rivers.
 - 4. Special characteristics.
 - 5. Work of rivers.
 - a. Channel,—erosion and deposition.
 - b. Flood plain.
 - c. Mouth,—deltas and estuaries.
 - 6. Usefulness to man.
 - a. Drainage,—normal and flood.
 - b. Natural irrigation.
 - c. River-made soils.
 - d. Navigation.
 - e. Water-power.
 - f. Food supplies (enumerate only).
- C. Wind action.
 - 1. Distribution.
 - 2. Effects.
 - 3. Control.
- D. Sea action.
 - 1. Zone of work.
 - 2. Evidences of work.
 - 3. Agents of work.
 - a. Waves.
 - b. Currents.
 - c. Tides.
 - 4. How influenced by changes of level.
 - 5. Stages of work.
 - 6. Favorable and unfavorable effects on industry and commerce.

Boundaries

- A. Coast line.
 - 1. Salient features.

- a. Sand beaches.
- b. Pebble beaches.
- c. Sand bars, spits, or capes.
- d. Marshes.
- e. Peninsulas.
- f. Shallow bays.
- g. Deep bays.
- h. Off-shore islands.
2. Shifting of the shore line—constant and periodic.
 - a. Deltas.
 - b. Estuaries.
 - c. Depression and elevation.
 - d. Storms.
 - e. Earthquakes and volcanoes.
 - f. Coral growth.
3. Variation in plant life.
4. Variation in animal life.
5. People of the coast.
 - a. Fishing communities.
 - b. Agricultural classes.
 - c. Commercial cities.
 - d. Pleasure resorts.
- B. Piedmont-tidewater contact.
 1. How recognized.
 - a. Geography.
 - b. Soil and vegetation.
 - c. Rivers.
 - d. Structure relation.
 2. Economic importance.
 - a. Water-power.
 - b. Building stones and minerals.
 - c. Cities.
 - d. Markets.
 - e. Railroad routes.

Climate

1. Zonal relations as based on latitude.
2. Controlling factors.
3. Temperature conditions.
4. Winds.

5. Currents.
6. Rainfall and humidity.
7. Seasonal variations.
8. Influence on agriculture.
9. Influence on commerce.
10. Influence on the social fabric.

Resources

- A. Agriculture.
 1. People engaged.
 2. Products and values.
 3. Markets.
 4. What is needed for further development.
- B. Fishing.
 1. People engaged.
 2. Kinds of fisheries.
 3. Markets.
 4. History of development.
 5. Importance and possibilities.
- C. Forest products.
 1. Varieties and locality.
 2. Lumber.
 3. Furniture.
 4. Turpentine and tar products.
- D. Commerce.
 1. Domestic (selected articles and values).
 2. Foreign (selected articles and values).
 3. Water transportation.
 4. Land transportation.
 5. Agencies of protection.
 6. Future prospects.