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National Geography Meetings

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its nature, and in 1832 published it under the heading "Electrical Self-induction in a Long Helical Wire." Faraday's investigation of self-induction was not published till in 1835. Therefore the honor of discovering self-induction unquestionably belongs to Joseph Henry." From the above quotation we infer also that the construction of the first telegraph line belongs to Joseph Henry and not to Samuel F. B. Morse who brought it into commercial use.

The phenomenon of self-induction can be readily grasped from the following simple experimental illustration. In figure 3 a battery B and a key K are connected in circuit with an elongated coil of wire. In a previous article it was pointed out that

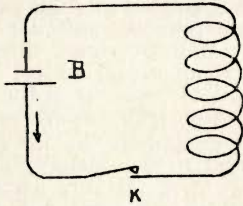


Figure 3

the magnetic lines of force around a straight current are circular with the wire at the center of the circles. The combined magnetic field of a series of circular turns of wire in an elongated coil carrying a current, however, is exactly like that of a straight electro-magnet. The lines of magnetic force when the current is flowing form straight lines in the coil passing out at one end of the coil and then curving around to return into the other end. It is evident that an elongated coil, Fig. 3, is an electro-magnet minus the soft iron core.

When the key K, Fig. 3, is closed, the current from the battery B rises gradually to its maximum because its energy is being used to build up the magnetic field, threading its circuit. This momentary loss of current energy is due to the fact that a counter current is induced which opposes its flow for the fraction of a second. On the other hand, when the current is broken by opening the key K, all the energy of the magnetic field threading the coil collapses, in a sense, on the circuit and induces a direct current which inten-

sifies the main current for a moment causing a bright spark at the key. This bright spark, which always occurs when an electric current is broken is due to the extra current induced when the number of lines of magnetic force threading the coil are rapidly reduced to zero.

It is a spark of this kind that is utilized in the common electric cigar lighter. This extra spark is also used by means of spark plugs in gasoline engines. A simple experiment to illustrate the extra current can be performed as follows: Connect an electro-magnet in circuit with two good dry cells. Not using a key, hold the two wire ends of the broken circuit over the top of a Bunsen burner with the gas turned on. Close the circuit by bringing the two ends of the wires together and then snap them apart suddenly. The gas of the burner will be ignited by the spark of the extra current.

L. Begeman.

ARE YOU EDUCATED?

(Continued from page 3)

of many diseases which now reach the epidemic stage in many communities. Many public buildings are poorly lighted, poorly ventilated, and poorly cared for. In most cases the cost would be no greater were the buildings as they should be. What most communities need is more people who are qualified educationally to understand and aid in the health problems of the community. Incidentally many of us will have to brush up a bit if we are to qualify under "The Ten Commandments" of Dr. Farr as an educated person.

H. Earl Rath.

NATIONAL GEOGRAPHY MEETINGS

The Christmas vacation always brings a full quota of meetings of interest to those who are engaged in educational work. Especially does this seem true for those interested in science. Two meetings of value to geographers were held at Ypsilanti, Michigan, where the new Union building, an alumni project of the Michigan State Normal College, afforded an excellent meeting place. The first of these was the meeting of the National Council of Geography

Teachers whose problems were mostly those of the teaching of geography in the elementary schools, high schools and colleges of the country. The second meeting was that of the Association of American Geographers. The program at this was given up entirely to research papers in the line of geography and closely allied subjects.

While not a great number of the readers of the Science Bulletin are engaged in the teaching of geography all are broad enough in their interests to find the domain of geography touching their lives at several points. As President McKenny, of the Normal College, well put it in his address of welcome: "What we need in our complex world of today is a knowledge of **peoples living today**. As an antidote to nationalism—overdone, everpresent, overwhelming, we need a knowledge of the problems, the struggles, the aspirations of other peoples. This would contribute to the right sort of internationalism. It is a calamity that a substantial course in geography is not given in our high schools."

The National Council of Geography Teachers at which geographers from teachers colleges, and universities which have departments of geography were in attendance, centered its program this year about the 1933 Yearbook of the Society for the Study of Education. The Yearbook which will appear in Feb. of 1933 is to be given over to geography and committees of the National Council have been at work on it for the past two years and will continue to work for several months to come. When completed it should be a valuable guide to all who are interested from any standpoint in the teaching of geography.

One of the outstanding papers at the Council meeting was that given by Miss Edith Parker of the School of Education of the University of Chicago whose topic was, "Developing the Science of Teaching Geography." In this paper Miss Parker stated: "Science seeks truths. Developing the Science of Teaching Geography means discovering principles of procedure in such teaching which can be objectively demonstrated as truths." Many types of investigation must be employed in deriving and testing the principles

such as: comprehensibility investigations; value investigations; selection, organization, placement investigations. In giving a summary of the progress already made in these investigations the speaker showed the relation of the body of organized school experiences gained through geography study to the major objectives of general education. The value investigations have demonstrated that geography's contribution is chiefly to "right social and civic attitudes which hinge on sound, well rounded perspective. Geography makes this contribution through giving insights into relationships between man and his natural environment.

The second meeting as has been stated was of a totally different nature and consisted of some sixty-five research papers and a dinner address by Dr. Isaiah Bowman, director of the American Geographical Society and president this year of the Association of American Geographers.

Among the papers the one of greatest interest to non-geographers was given by O. E. Baker, agricultural economist of the United States department of agriculture. Dr. Baker's theme was: "Regional Shifts in Land Utilization in the United States as Shown by the 1930 Census." The paper was supplemented by a vast amount of data shown in graphic form. Some of this will doubtless be available in coming issues of the United States Yearbook of Agriculture. His discussion showed the great decrease in crop acreage since the preceding census. The 1930 census shows 41,000,000 acres of idle land. The decrease at the time of the last census was taking place in the south, but the 1930 census shows a decrease in every state east of the Mississippi. 17,000,000 acres of this idle land have been put out of use by erosion and may never be brought back. If it is brought back great expense will be involved. He estimated that in the next 100 years there will be a loss of 100 million acres due to soil erosion. In sections of western Oklahoma it is estimated that there has been a foot of soil eroded from the surface within the last twenty or thirty years. While the crops from these eroded lands are not necessary to the United States as a whole the local problems

of tax delinquency and abandoned farms is one of great concern.

Simultaneously with this decrease in crop land there has been an increase in the production of certain of the major crops. This is due partly to increased crop yield, partly to the fact that some of the lands used for hay for horses now produce other crops, but more largely to shifts in crop areas. Wheat has pushed into regions of marginal rain-falls by the aid of the tractor and the combine which have stimulated large scale farming on cheap land. This has taken wheat out of the east and south. In the south it has been replaced by cotton, while corn has replaced it in some of the other areas.

One of the most striking things shown is that with fewer animals we have a great increase in animal products, an increase of some 23% since the last census. This is due to the notable increase in efficiency in transforming feed into food by such economies as the culling out of poor cows and a decrease in the infant mortality among hogs. This latter has meant an increase of millions of pounds of pork.

Coupling with this increase in production of foods the fact that 90% of the land is used for producing for the home market the speaker proceeded to show the decrease in the rate of population increase, giving a very low figure for the birthrate for the first nine months of 1931. In addition he pointed out that similar decreases in the population are taking place in countries where we have formerly disposed of our surpluses. Dr. Baker concluded by saying that the farmers of the United States should realize that a great change is taking place, that a period of wide spread agricultural contraction has set in. More of Dr. Baker's findings will be presented at the next meeting which is to be at Washington, D. C.

Several papers were devoted to chorographic technique. An extensive study of the coffee lands of Brazil carried on under the auspices of one of the large foundations was reported on by Dr. Preston James of the University of Michigan. In his study he had endeavored to find out the relation of coffee growing to soil,

slope, frost drainage, drainage, rain-fall and length of dry season.

A number of papers reported land occupancy studies in the United States and foreign countries. Dr. Glenn Trewartha of the University of Wisconsin presented a paper on "The Prairie du Chien Terrace: the Geography of a Confluence Site." This is a part of a state wide study begun by the geography department of the University and will be of interest to readers in northeastern Iowa, especially to those who attend the Wild Life School at McGregor and daily see the Prairie du Chien terrace spread out before them.

Alison E. Aitchison.

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THE LURE OF THE TURTLE

Not long ago, in one of my favorite haunts, I saw a young man amusing himself by shooting painted turtles with a high-powered rifle. He was using hollow-pointed bullets, and to one unfamiliar with their effects upon animal tissues, what happened to those unfortunate turtles sounds utterly incredible. At the report of the rifle, the victim would appear to leap violently from the log into the air, and seem actually to explode, the fragments of shell and flesh dropping into the creek on all sides. Sometimes the marksman would pick two or three from the same log before the stupid creatures, with necks and heads greatly extended and backs glistening in the sun, could seem to realize what was happening. Between shots, I engaged him in conversation and discovered, to my surprise, that a turtle to him was simply a turtle, a mere name, not a creature of flesh and blood and brain like himself, but only a target, a something to shoot at. He stared incredulously, and seemed a bit ashamed, when I remarked casually that with each shot he was wrecking beyond repair what nature had taken fifty years to build, for each six-inch turtle was twice or more the age of himself. So we presently fell to talking about turtles and their ways; I told him of a few of the things I had learned about them, and I doubt that he has killed one since. Which, to my way of thinking, is about the only way we can teach the conservation of wild life effectively, that is, to create human interest in the ani-