not require any ring formation around the earth. It requires only that the general space surrounding the sun and planets contain an exceedingly small density of diffused iron particles, capable of being affected or oriented when in the magnetic field surrounding the earth, in which case they reflect the light of the sun to observers on the earth who are in favored relation to them. Moreover, it may well be that the magnetism of the earth would tend to concentrate such iron particles, if any, in the space around it. If we have found a clue to the observed effects, further observations and investigations may confirm or oppose the hypothesis presented.

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THE PHYSICS QUADRILATERAL

ONE of the joys of a teacher in a university is the weekly colloquium or departmental meeting in which by cooperation he is able to keep fairly well informed as to the work that is being done in his special line. In the average American college, however, where the teachers are few and the duties numerous, a weekly or even a monthly colloquium is hardly practicable. Especially is this true in a subject like physics, where a considerable mathematical equipment is necessary, and consequently the reading of an average article in a physical journal is laborious and often impossible for a college student. So his contribution to a colloquium is nearly negligible and most of the burden falls on the professors. The natural result is that the colloquium idea is given up and the few members of the physics staff despair of being able to keep in touch with what is going on.

To remedy such a condition in this vicinity the following plan was adopted two years ago: The teachers of physics in the four colleges, Mount Holyoke, Smith, Massachusetts Agricultural and Amherst, established "The Physics Quadrilateral." President Olds, of Amherst, who had studied under Helmholtz, Kirchhoff and Quincke, was added to our membership. The first meeting was held at Amherst and was addressed by Dr. Gladys A. Anslow, of Smith. A discussion followed and then refreshments. Other meetings were held in rotation at intervals of about a month at the other colleges. The Quadrilateral's only officer is a secretary, and the program is usually arranged by the department of the college at which the meeting is held. The feature of one of our recent meetings was an address by Professor Louis V. King, of McGill University, on "The Gyromagnetic Electron and a Classical Theory of Atomic Structure and Radiation." The final meeting of the first year took the form of an excursion to the high-tension laboratory and plant of the General Electric Company at Pittsfield.

It is scarcely necessary to add that The Quadrilateral is a source of benefit and pleasure to all its members, and this communication is written that other colleges similarly situated may pool their resources and reap similar reward.

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THE POISONING OF HONEY BEES BY COMMON ORCHARD SPRAYS

RECENT studies made by the Massachusetts Agricultural Experiment Station have indicated that there is little danger of significant mortality of honey bees from the spraying of orchards, provided that the recommended combination of lead arsenate, lime-sulfur and nicotine sulfate is used.

In laboratory tests, bees were strongly repelled by this regular spray combination (lead arsenate, 1½ lbs. to 50 gals.; lime-sulfur, 1:40; and nicotine sulfate, 1:1,000). This mixture, however, even when consumed in minute amounts, proved to be very toxic to them and was rapid in its killing action. Lead arsenate spray was readily accepted. A one-frame nucleus to which this was offered lost approximately one half of its bees within forty-eight hours after feeding. Any mixture containing nicotine sulfate was very repellent to the bees, and they would feed upon it but sparingly. This strong repellent action persisted for a considerably longer period in the laboratory than in field tests, and appeared to vary according to the volatilization of the nicotine.

Under Massachusetts conditions, the orchard sprays applied nearest the period of bloom are the pink and the calyx. No sprays are scheduled to be made when trees are in full bloom. Neither of these sprays, made when there was considerable bloom on the trees, caused any serious mortality to colonies located in the sprayed orchards. Following the late pink, trees soon came into full bloom; after the early calyx, the bees repelled by the spray doubtless foraged in neighboring orchards. In both cases they found an abundance of unpoisoned bloom upon which to work. This would indicate that improper spraying must be carried out on a large scale to visibly affect colonies not subject to any restrictions of flight.

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ACOUSTICS IN THE STUDY OF "SOLUTIONS"

WHILE stirring a dose of Epsom salts in water for a patient I noted that if I strike the container (a glass) with the mixer (a glass rod) at regular intervals until the solute is entirely dissolved, each stroke