ceeds of which are to be devoted to research work in the department of pediatrics in Cornell University Medical College in New York City.

THE trustees of Rutgers College, on October 12, received an anonymous gift of $150,000 for an addition to the Vorhees Library building.

IN the will of the late William S. Richardson, who died October 6, the sum of $75,000 is left to the Massachusetts Homeopathic Hospital, Boston, on condition it keeps pace with the general advancement of medicine and surgery for the next five years. If the hospital is not progressive the fund will go equally to Harvard University and the Sulgrave Institution, which institutions are to receive the remainder of the $210,000 estate.

IT is announced that the formal opening of the Atlanta Graduate School of Physicians and Surgeons will take place April 9, 1924. Dr. William Perrin Nicolson is dean, Dr. Garnett W. Quillian, vice-dean, and Dr. Michael Hoke, president of the faculty.

EDGAR ALLEN, Ph.D., Washington University, St. Louis, has been appointed professor of anatomy at the University of Missouri School of Medicine, Columbia.

GEORGE R. GAGE has been appointed an instructor in botany in the department of biology of DePauw University for the present year.

DR. OLE N. DEWEERDT has been appointed head of the department of psychology at Beloit College.

DR. IRVING S. BARKSDALE, Richmond, has been elected associate professor of physiology at the Medical College of South Carolina at Charleston.

DISCUSSION AND CORRESPONDENCE

SODIRO HERBARIUM

WHILE at Quito I had the opportunity of examining the herbarium left by the well-known botanist, Sodiro, who brought together the only important collection of plants in Ecuador. The collection is housed at the Colegio de San Gabriel, a Jesuit institution, where it is appreciated and is being well kept. My examination was confined to the grasses, but I assume from the size and general appearance of the collection that all families are well represented.

The original Sodiro specimens are, for the most part, mounted and well labeled. Nearly all are accompanied in the herbarium by one to several duplicates, these being sometimes mounted but usually unmounted, lying in folders with the labeled specimen.

I was permitted to select a series of duplicates for the U. S. National Herbarium, for which I was charged ten dollars per hundred. Apparently the college is willing and anxious to dispose of the duplicates at the price mentioned. Those interested in Andean botany would do well to supply themselves. I am informed that the college has a collection of about 400 birds that it wishes to sell. Of the condition of these I know nothing. It will be of interest to botanists to know that the college has on hand extra copies of many of the publications of Sodiro which it wishes to sell. Father Mille, through whose kindness I was enabled to examine the herbarium, and who is the only Ecuadorean botanist interested in collecting, is adding to the Sodiro Herbarium.

All communications should be addressed to Father Luis Mille, Apertada 266, Quito, Ecuador.

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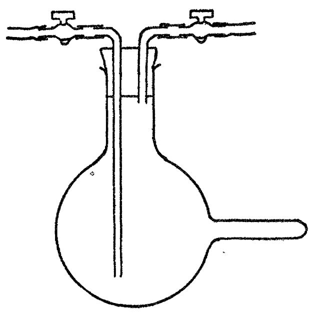
A CLASS EXPERIMENT TO SHOW THE BEHAVIOR OF HEMOGLOBIN TOWARD VARIOUS GASES

Two years ago I introduced into the laboratory work of my class in biochemistry at the University of Virginia a simple experiment which has proved so successful in making real to students the behavior of hemoglobin under exposure to various gases that I am passing it on to others. The points of special value in the experiment are: (1) avoidance of frothing of the laked blood by bubbling gases through it; (2) convenience in observation of the spectrum; and (3) ease of estimating the approximate and relative times required for the completion of the various reactions observed.

Into the side of a 250 cc balloon flask is fused a 10 x 80 mm test-tube; the size of test-tube is chosen so that it will fit into the holder of a direct vision hand spectroscope. The mouth of the flask is closed by a 2-hole stopper; glass inlet and outlet tubes, shown in the diagram, permit the passage of any gas through the flask. It is thus possible to spread a solution in a thin layer over the sides of the flask during aeration and to return it immediately to the test-tube for spectroscopic examination.

Laked blood is diluted with water until, when examined spectroscopically in a small test tube, two distinct and fairly deep absorption bands of oxyhemoglobin are seen. This oxyhemoglobin solution is then poured into the dry spectroscopic glass flask and the stopper made tight. Stop-cocks are provided on each piece of rubber tubing to insure exclusion of air during spectroscopic examinations.

A current of nitrogen, hydrogen or carbon dioxid is then passed through the flask while the laked blood is kept spread in thin layers on the walls by gentle rotation, and the reduction of the oxyhemoglobin to hemoglobin observed both with the naked eye and spectroscopically. It is usually complete in a few (three to five) minutes with a moderately strong aerating current.



The immediate reverse change to oxyhemoglobin upon blowing through a current of air is then observed spectroscopically.

Carbon monoxid or illuminating gas is then passed through the flask and the very rapid change to carbonyl-hemoglobin observed both by the cherry red color on naked eye inspection and also spectroscopically. It goes without saying that this can be performed, starting either with hemoglobin or with oxyhemoglobin.

The change from carbonyl-hemoglobin to hemoglobin is then observed by the passage of a current of nitrogen, hydrogen or carbon dioxid. Usually it takes 15 or 20 minutes to effect the complete disappearance of the two carbonyl hemoglobin bands as compared with the three to five minutes required for the disappearance of the two oxyhemoglobin bands under identical conditions, thus visualizing to the student the difference in velocity of dissociation of oxyhemoglobin and carbonyl-hemoglobin.

That the combination of the hemoglobin with carbon monoxid has not changed its power of combination with oxygen is then readily demonstrated.

It is also instructive to require the student to explain why a current of nitrogen or other indifferent gas changes both oxyhemoglobin and carbonyl-hemoglobin to hemoglobin, while ammonium sulphide or Stokes reagent has this effect only with oxyhemoglobin.

The apparatus also obviously lends itself to other instructive demonstrations. When the aeration flask and test-tube are made strong enough and pressure tubing is employed the air pump may be used instead of the current of indifferent gas. The behavior of hemoglobin towards other gases, active and indifferent, as well as the influence of physico-chemical conditions in the solvent may similarly be studied.

These experiments bring home to the student that in all cases the common factor responsible for breaking up the combination of hemoglobin with active gases is the reduction of the partial pressure of the active gas in the solution. Practical hygienic applications to the treatment of cases of gas poisoning are obvious.

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THE TRANSMISSION OF NEMATODE RESISTANCE IN THE PEACH

IN the spring of 1919 the writer, at that time connected with the Georgia Experiment Station, planted peach seedlings grown from pits obtained from three sources in root-knot nematode infested soil at the Georgia Experiment Station.

One lot of pits was obtained from a tree on a farm near Tallahassee, Florida, a second lot was obtained near Cordele, Georgia, and the third lot was made up of seed from several trees growing at the experiment station.

During the summer it was observed that the seedlings from the Florida pits were growing more vigorously than those from the two lots of Georgia pits.

Examination of these trees in the fall of 1919 showed that the Florida seedlings were practically free from root-knots; while the seedlings from both lots of Georgia pits were heavily infested, thus accounting for their less vigorous growth.

The resistant peach seedlings were reset in nematode infested soil where they continued to make a vigorous growth during the season of 1920. Examination in the fall showed that these seedlings retained their resistance to the root-knot nematode as stated by the writer in the annual report of the Georgia Experiment Station.

Since the peach is not readily propagated except by seed nematode, resistance will have to be seed transmitted if much practical use is to be made of this resistance, so tests were planned to determine this point.

These resistant peach seedlings produced their first crop of fruit in the summer of 1921, and seed from these were tested in root-knot nematode infested soil in the summer of 1922. Pits from Belle of Georgia fruits were planted in the same soil as checks.

In the fall of 1922 the seedlings were dug and examined and it was found that the trees from Georgia Belle pits were heavily infested with root-knots, while the second generation Florida seedlings were free from root-knots. This indicates that this Florida seedling peach is resistant to the root-knot nematode and that the factor for resistance is seed transmitted.

Since July 1, 1922, the writer, as a member of the Tennessee Experiment Station, has continued this