ion that afferent nerves affect all the bulbar vasomotor cells alike. The bulbar vasomotor center, therefore, would not regulate the distribution of the blood in the several regions of the body, but would merely raise or lower the general blood-pressure.

The American Naturalist for August opens with an article 'On the Nesting Habits of the Brook Lamprey (*Lampetra wilderi*),' by Robert T. Young and Leon J. Cole, followed by a paper 'On Variation of the Rostrum in *Palæmonetes vulgaris* Herbst,' by Georg Duncker, in which the writer takes the ground that there is no relation between the average and the variability of a character. Frank Smith gives 'Some additional Data on the Position of the Sacrum in Necturus,' concluding that we need more data before trustworthy conclusions can be reached, and J. R. Slonaker describes 'A Strange Abnormality in the Circulatory System of the Common Rabbit (*Lepus sylvaticus*),' consisting of a connection between the portal vein and posterior *vena cava*. 'The Origin of the Middle Ocellus of the Adult Insect' is considered by Chujiro Kochi, and this is followed by part XII. of the 'Synopses of North-American Invertebrates' devoted to 'The Trematodes, Part I., The Heterocotylea or Monogenetic Forms,' by H. S. Pratt. There are numerous interesting reviews.

The Plant World for August has for its first article 'When Increase in Thickness begins in our Trees,' by Geo. T. Hastings, giving the results of some recent experiments. 'Judging by the Fruits,' by Byron D. Halsted, presents two series of examination papers with their answers based on a change of text-books from 'Gray's Lessons' to 'Coulter's Plant Relations.' C. F. Saunders describes the 'Root System of the Snake-Mouth Pagonia,' and the same writer gives a view of 'Quaker Bridge, New Jersey,' the spot where the very rare fern, *Schizæa pusilla*, was discovered. The Supplement, devoted to the 'Families of Flowering Plants,' by Charles Louis Pollard, contains descriptions of the Smilaceæ, Hæmodraceæ and several succeeding families.

In *The Osprey* for August Paul Bartsch continues 'Birds of the Road,' and Theodore Gill gives the sixth part of 'William Swainson and his Times,' coming down to the acquaintance of Swainson and Audubon and the interesting correspondence between the two. In the 'Letters' Witmer Stone prints a communication from Cassin on Baird's first paper, in which he described *Empidonax flaviventris* and *E. minimus*.

The Popular Science Monthly for September commences with an interesting account of 'The Modern Occult,' by Joseph Jastrow, concluding that it is Utopian to look forward to the day when the occult shall have disappeared. Frederic A. Lucas discusses 'Birds as Flying Machines,' drawing attention to the fact that there are various modes of flight. Wm. Baxter, Jr., describes 'Electric Automobiles,' and E. B. Rosa considers 'The Human Body as an Engine,' finding a striking parallel between the body and a locomotive. Simon Newcomb continues 'Chapters on the Stars,' treating mainly of their spectra and spectral research, and Havelock Ellis gives the second part of 'The Psychology of Red.' 'The Expenditure of the Working Classes' is treated by Henry Higgs, who considers that they waste a great deal, and George G. Groff presents a somewhat optimistic view of the 'Conquest of the Tropics.' In the Correspondence, R. E. C. Stearns shows the 'Antiquity of the Chewing Gum Habit' and there are some good summaries in 'The Progress of Science.'

NOTES ON INORGANIC CHEMISTRY.

When a decade or so ago the problem was solved of obtaining aluminum at a comparatively low cost, it was believed by many that there would be at once an immense demand for the metal, and that it would replace iron and perhaps other metals for many purposes. While this has not been the case, the demand for aluminum and the corresponding output have steadily, if slowly, increased, and at the present time are increasing rapidly. In the *Zeitschrift für angewandte Chemie*, W. C. Heraeus calls attention to the increasing use of aluminum in the chemical industries. One great difficulty heretofore in using aluminum for such purposes has been that when in contact with another

metal, galvanic currents are generated which rapidly corrode the aluminum. It has hence been impossible to use vessels where the metal was soldered. A process has recently been devised which enables the welding of aluminum without the aid of a flux. This will greatly increase the usefulness of aluminum. The tensile strength of the metal is only one-fourth less than that of copper, and while its conductivity for heat is only half as great as that of copper, it is twice as great as that of iron. The use of aluminum as a conductor of electricity is also growing rapidly.

AN interesting investigation has recently been carried out by H. J. Möller of Copenhagen, and published in the *Berichte* of the German Pharmaceutical Society, on colored glasses, with particular reference to the proper color for bottles which are intended to protect medicines, etc., from the chemical action of the light. It was found that the best protection is afforded by black (opaque), red, orange and dark yellowish-brown glass—light brownish-yellow, dark green (with no bluish tint) and dark brownish-green glasses afford quite good protection; bluish-green, violet, milky, bluish and colorless glasses give little if any protection from the actinic rays of sunlight. For the preservation of wine, beer and liquors, dark brownish-yellow and dark yellowish-brown bottles are to be preferred, while light brown, light green and bluish-green glass is less to be recommended.

A NEW and curious chapter has been added to the chemistry of the radio-active elements by A. Debierne in one of the latest *Comptes Rendus*. By dissolving barium chlorid in a solution of actinium and then crystallizing or precipitating it out, a radio-active barium is obtained which shows many similarities to the radiferous barium from pitch blende. Its rays are capable of ionizing gases, excite the phosphorescence of barium cyanoplatinite, are photographically active, and are partially deflected in a magnetic field. The anhydrous chlorid thus obtained is self-luminous. On the other hand, this salt shows only the spectrum of pure barium, while that from pitch blende gives the radium spectrum. The former gradually decreases in activity, while the latter increases up to a maximum, at which it remains constant. Debierne considers that it is improbable that his active barium should contain any radium or any actinium, but that it is probable that by prolonged contact with actinium salts the barium has become itself temporarily active. This inductively active barium appears to be intermediate in its properties between radium and barium.

J. L. H.

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*EXPERIMENTAL STATIONS IN HAWAII AND PORTO RICO.**

THE last appropriation acts for the Department of Agriculture carried provisions for the inauguration of experiment stations in the islands of Hawaii and Porto Rico. In accordance with this the preliminary steps have been taken to determine the best plan of operation in each case and the subjects which are in most need of immediate attention.

Professor S. A. Knapp, of Louisiana, who for a considerable number of years has been engaged in subtropical agriculture on an extensive scale, was selected to investigate the agricultural conditions and possibilities of Porto Rico. Professor Knapp went to the island early in June. In general he will study the present agricultural conditions existing in Porto Rico, the lines of experimental investigation which should be undertaken there, especially in the immediate future, and the locations suitable for stations, together with the approximate expense of inaugurating and maintaining the work of the stations. He will also look into the feasibility of undertaking cooperative experiments with the residents of Porto Rico, and the best means of reaching the people through different classes of publications, demonstration experiments, and otherwise.

For the preliminary survey of the conditions in the Hawaiian Islands, Dr. W. C. Stubbs, director of the Louisiana Experiment Station, has been selected as especially fitted by experience. Dr. Stubbs sailed for Hawaii about the middle of July, and will spend the month of August in the islands. The conditions there with reference to station work are different

* From the *Experiment Station Record*.