Our grandmothers found old-fashioned yellow soaps best for their purposes but more and more the modern housekeeper leans toward white laundry soap for her ordinary washing uses. This is explained by the disappearance of the old-fashioned rain barrel and cistern and the growing use of hard water from the deep well supply of city mains. Hard water requires the addition of more alkaline constituents and the substitution of coconut oil for the rosin found in soft-water soaps.

To make a fair test of the cleaning ability of the different soaps, standards for dirt are likewise being set up in the Government laundry. Most hardworking housekeepeers know to their sorrow that the most innocent looking spots of dirt sometimes prove terrifically stubborn. Carbon black, umber, and various oil combinations are being tried out as fairly representative and stubborn specimens of dirt.

After it has been discovered what soaps are best for a given cleaning job, the question still remains for the laundry chemist: What makes the soap clean well and what should a good soap contain?

By strict definition, all metallic salts of fatty acids are soaps but, as a matter of fact, only the fatty-acid salts of alkali metals are soluble in water and hence practical for ordinary cleaning. To a less extent rosin acids are used.

Soap is practically never used in its pure state, as various "builders" are added to adapt it to special uses. Sodium carbonate, borate, silicate, and phosphate are added to make the soap harder and more effective in hard water. Clay, sand, volcanic ash, infusorial earth, pumice and starch in soap serve to scrape and wear the dirt away like good-mannered sandpaper.

To the point which these "builders" serve the purpose for which they are added, they enhance the value of the soap. Sometimes, however, the soap manufacturer is tempted to use an excess of the "builder" to increase the bulk of his product without increasing the cost. And it often happens as the unreliable manufacturer hopes, that the housewife is deceived into believing that she has found a bargain when she gets a large piece of soap for her money, though she is in reality paying dear for clay and starch.

Protecting wholesale soap buyers against such deceptions, the Government has formulated a set of standards for various kinds of soap, including white floating soap, liquid soap, soap powder, grit cake soap, automatic soap, chip soap, ordinary laundry soap, scouring compounds and hand grit soap. This enables the buyer to ask for soap conforming to certain minimum specifications and adapted to his needs and provides a test whereby he can readily determine whether he is being supplied in accordance with contract.

The cleaning ability of a soap is only one of its qualities measured in the tests. The shrinking effect of a given soap and its effect on dyestuffs are other factors that go into the ultimate rating.

Science News Letter, March 7, 1931

CHEMISTRY

Radium Rays Three Times More Effective than X-Rays

THOUGH radium rays and X-rays cause reddening of the skin to nearly the same extent, the radium is about three times more effective in producing certain other biological effects.

This is the conclusion announced to the Optical Society of America by Dr. G. Failla and P. S. Henshaw of the New York Memorial Hospital.

The work has required the development of an apparatus which would measure equivalent, comparable doses of the two radiations. It was found that 500 roentgen units of radium gamma rays produced the same reddening of the patient's skin as 600 roentgens of filtered X-rays.

Other experiments were made on wheat seedlings. In both cases the effect of the radiation is shown as a stunting of the shoots and roots. Three times as much X-radiation was required in this case to produce equal effects. Hence it may be desirable to use higher voltages with X-rays for medical purposes.

Dr. Failla emphasized the fact that the suitability of a certain type of rays for a given tumor must always be taken into account.

Science News Letter, March 7, 1931

PALEONTOLOGY

New Dinosaur Species Described in Washington

TWO NEW species of dinosaurs have made their bow to scientific society in Washington, with the publication of their description in the Proceedings of the U. S. National Museum by Dr. Charles W. Gilmore, paleontologist.

The fossil remains of these ancient reptiles were discovered on the Blackfoot Indian reservation in Montana. The bones were brought to Washington for preparation and examination.

One of the dinosaurs, *Paleoscinus rugosidens* by name, was a medium-sized monster with a skull about a foot and a half long. It had a well-developed armor of bony plates on its back in the region of its hips, and was ornamented with numerous formidable spines. The other species, *Styracosaurus ovatus,* resembled the well-known Triceratops, or three-horned dinosaur, though it is not known how many horns it had. Its outstanding characteristic was an array of radiating spines projecting from the edge of the bony frill that protected the animal's neck.

Science News Letter, March 7, 1931

ICHTHYOLOGY

Fish Shoots Insects With Drop of Water

A FISH that shoots its insect prey with a drop of water is among the ichthyological incredibilities definitely assured as scientific facts by Dr. Hugh M. Smith, former United States Fish Commissioner, who recently returned to Washington from Bangkok, where he is adviser in fisheries to the Siamese Government. So accurately can the little fish hurl its liquid projectile that on at least two occasions Dr. Smith has seen lighted cigarettes extinguished in the mouths of smokers on a veranda a couple of yards above the surface of the pond where the fish were swimming.

When the shooting fish sights an insect that it considers a likely candidate for dinner, it quietly pokes its eyes and the tip of its snout above water, holding its body at an angle of about forty-five degrees. It opens its wide mouth just the slightest crack in the middle, like a veteran terbakker-chawer from the Ozarks, and at the same instant suddenly squeezes its gill-covers. The speeding drop of water that shoots forth seldom fails to bring down its mark. Dr.