during the last few years there has been an increasing tendency to make the free fatty acid test a basis of contracts. As a matter of experience it is found that an oil which falls below the highest figure representing the limit of free fatty acid for a particular grade, will also conform to the accepted color standard for that grade; there are exceptions, as for instance, when an oil is discolored by iron salts, but these are rare.

The accepted grades are known as No. 0, No. 1, No. 2, No. 3, and No. 4. No. 0 and No. 1 are now generally classed together, the former being regarded as a superfine No. 1; the color varies from pale straw color to fine pale yellow. No. 2 is amber yellow and No. 3 pale brown, while anything too dark to be classed as No. 3 is regarded as No. 4, unless it is very bad colored when it is referred to as "dark whale oil." In the year 1912 samples representing some 650,000 barrels, or about three-fourths of the entire production for the year, passed through my hands; the color was measured in the Lovibond tintometer and the resulting average was adopted as a standard, which has met the views of both sides of the trade so well that no suggestion for an alteration has been expressed. In conjunction with Mr. J. W. Lovibond a set of standard glasses was prepared and these have proved very useful for the rapid examination of samples so necessary when a large cargo has to be rapidly discharged.

In order to examine crude whale oil in the tintometer it is necessary to warm it slightly in order to melt the stearine; a temperature of 75 to 80 deg. F. is sufficient for the purpose. The oil as delivered by the ship, always contains moisture which should not exceed 0.5 per cent. The sample must not be heated sufficiently to drive off water, and besides, this would probably darken the oil to some extent, neither must filtration be resorted to as thereby color might be removed. Considerable care is therefore needed to obtain accurate results, but a little practice will soon overcome any difficulty in the preparation of the sample.

Modern whale oil is a very different thing from the evil smelling stuff most of us have encountered in our early days; now even the dark colored qualities are not really objectionable, while the pale kinds are quite sweet, possessing no disagreeable taste or smell.

Filipino Silversmiths*
By Elmer S. Green, General Office

THE trade of the silversmith is an old one in the Philippines. From the Mountain Province to Mindanao are to be found men skilled "in all manner of workmanship; and to devise curious works, to work in gold, and in silver, and in brass, and in the cutting of stones to set them." Almost every town in the Christian provinces has its "platero" who often lives in the same house and uses the same tools as did his father and grandfather. The members of his own household assist in the simpler and cruder operations, some soldering or assembling parts of chains, others polishing. Work in silver has lately been taken up as an industrial subject in some of the public schools, especially in Bohol. A large assortment of products from that province was exhibited at the Carnival and is now on sale at the retail salesroom in Manila.

Perhaps the largest center of the silversmith's craft is at Bantay, Ilocos Sur, just beyond Vigan. Necklaces and bracelets of gold and silver are made there in great numbers. Long strings of hollow gold beads terminating in pendants, are sold at from 30 to 100 pesos. In each of these at least three forms of beads are combined; the largest number are of simple tube shape, flaring at the center; others are flat and circular, each face bearing a design; the finest are spherical, about 5 millimeters in diameter, and designs are embossed upon them. Sometimes small pearls are alternated with the beads. The pendants are most commonly oval medallions, 2 centimeters or more across the face; in the center of each is a carved gold flower, glass covered on both sides. Crosses are common also, some of most delicate workmanship being ornamented with rows of small leaves, one set above the other. The crucifixes are generally of silver with gold plating. Strands of beads, rather crudely made of silver, then gold washed, are sold at Bantay and in the shops of Vigan for 2 pesos. Many of these are carried to distant provinces for sale by Ilocano traders. These "rosarios" whether cheap or dear are distinctive and beautiful, and it is to be regretted that they are being displaced in favor, except among the more conservative people, by tawdry imported machine made chains.

Rings of low karat gold are often set with clusters

of small pearls. Back combs, the visible parts covered with gold and ornamented with raised and usually detachable flowers, the petals of gold, the center of pearl, are sometimes of exquisite workmanship. Brooches and long metal hair pins are similarly decorated with gold and pearl. Earrings are for the most part copies of old-fashioned European models. Among the hoarded treasures of the wealthier people of Vigan are to be seen examples of the workmanship of older days. A style of neck chain now rarely seen is made of small rectangular planchets of gold bordered with filigree work, the chain having the appearance of a narrow strip of lace transformed into gold.

At Bangued in Abra is a silversmith whose work is known and sought throughout the Islands. After the Carnival which just closed, the Bureau of Education bought from him more than 500 pesos worth of goods, chiefly silver mounted camagon canes and boars' tusks, for disposal at the retail salesroom. At Baguio and Trinidad there are half a dozen Ilocanos who make spoons and "Igorot" earrings for the tourist trade. The spoons have twisted handles and terminate in figures of Igorots, rather too elaborate. If one has the confidence of a silversmith and asks his opinion, he will explain that the highly ornamental stuff is not artistic; that he makes it to sell, and not because he considers it beautiful.

The fine jewelry of a hundred years ago was made from Spanish gold coins without additional alloys. Now American five and ten-dollar pieces are used, and they command a slight premium in the provinces. At Bantay, some of the work is done with "sea gold," dust which a few of the inhabitants of San Vicente laboriously wash from the black sands which the Abra River brings to the coast. For the making of beads, a mixture of two parts of gold to one of silver is ordinarily employed, the unfinished article appearing very white. For rings and earrings copper is added, the resulting alloy being extremely red. The beads are colored by placing them in a saucer with a gold coin. An acid solution is poured over beads and coin and after a time the beads take the desired color.

In silver there are made spoons, key rings, knobs for canes, and an infinite variety of pieces to order. These articles are rough cast into the general form desired, then beaten and filed into shape. The price is fixed in accordance with the amount of metal used: as much for the work as for the silver. The silver is secured from obsolete coins. Mexican dollars, Spanish "pieces of eight," so old that they might have been pirates' treasure, and later pieces bearing the portraits of Alfonso XII and of Alfonso XIII, all go into the melting pot. The older "Carlos" pieces are preferred, as they are said to be of softer and purer metal.

Case of So-called "Subconscious Malingering"

In a recent article in *The Lancet* (London) was discussed concussion injuries of the visual apparatus and several interesting cases were cited, among which was the following:

"Private E. F., aged 45, was sniping from the trenches at Zonnebeke one evening in September, 1915, when he was hit on the left side of the head and face by fragments of what he maintains was an explosive bullet, which struck some object only a few inches away from where he was standing. He fell unconscious, and remained in that state for about one hour. On coming round he discovered he was blind in both eyes, and remembers that he noted this at a time when the bandages which covered both eyes were temporarily removed. On about the tenth day after the wound the bandage was permanently taken off the right eye, and he found vision with that eye was normal again. The left eye remained covered with a shade for some more weeks, and when it too was removed he declared he was quite blind in the left eye still, and he has remained so ever since.

"On examination in March, 1917, the left eye was seen to be normal in all respects, with normal pupil reactions. The optic disc was normal and identical in appearance with the right. No defect of any kind was discovered in the nervous system, either organic or "functional." With the double prism and the "friend" tests the patient was completely caught out, and the nature of his visual condition at once demonstrated."

Here, in spite of the general cerebral concussion, unconsciousness, and immediate blindness, the persisting visual defect is clearly seen to be of the nature of so-called "subconscious malingering." Whether the blindness noted at the outset was a concussion phenomenon is questionable, in view of the facts that the patient was not struck on the back of the head, and also that he knew he had been hit in the face and round the left eye, was told there was dirt and sand in both eyes, and remained with both bandaged for some ten days. To exclude the

possibility of a peripheral concussion would be more difficult, and it is conceivable we have here a hysterical symptom erected on an existing slight organic basis. The case is quoted to illustrate this difficulty in determining whether a persisting symptom is an original symptom, as well as the further difficulty of assigning relative importance to the more or less synchronous actions of more than one etiological factor."

Solar Ovens

In view of the scarcity of coal or wood in many sub-tropical regions, such as Egypt, the Punjab, and the Karoo of South Africa, it is interesting to note the report recently made by Sir F. Nicholson, describing, among other things, valuable experiments in the employment of solar ovens. These consist of stout teakwood boxes, blackened inside and fitted with a double glass top. They are suitably insulated, and with this simple apparatus a temperature of from 240° to 275° (Fahr.) is easily obtained during the middle of the day from 11 a. m. to 3 p. m., and 290° with the aid of a single glass mirror. The oven once constructed costs nothing, and for all mere baking or cooking purposes it is a very efficient and cheap utilization of sun heat, suitable for many applications. A summary of the report is given in the *Indian and Eastern Engineer*.

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*The Philippine Craftsman.