The great pearl-fishery of Ceylon is carried on at stated periods on the banks of the north-west coast of the island, at the entrance to the Gulf of Manaar. As it is a government monopoly, great care is now taken to give rest to the fishery, so as to allow the oysters to attain a maturity of five or six years, which will warrant a rich yield of pearls. There is a prospect of a good pearl-fishery in 1888; and it is confidently expected that as many as 300,000,000 oysters will be fished, requiring every boat and every diver procurable in Ceylon and southern India. The small, thin shells of this oyster (*Avicula fucata*), unlike the heavy, true mother-of-pearl oyster (*Meleagrina margaritifera*), have little or no commercial value, and are chiefly burnt for lime.

When a fishery is proclaimed, the arid sands at Arippu, on the north-west coast, become, as it were, a bustling town of tents, filled with people of varied races and occupations, including boatmen from the Coromandel coast, pearl-dealers from India, Malaya, and China, with the accompaniments of merchants and traders of all classes. The Ceylon Government takes as royalty two-thirds of the oysters gathered, which are sold by auction at the close of each day's fishing. Only a limited number of boats and divers are licensed to fish.

The fishing can be carried on only during the very calmest period of the north-east monsoon, — February to April. In these months the wind blows off the land during the night, and off the sea during the day, which enables the large fleet of fishing-boats to reach the pearl banks by daylight on each morning, returning with their cargoes shortly after noon. The boats, containing twenty men (half divers), are divided into two fleets, which go out to their work on alternate days. The price realized for the oysters varies from £2 to £7 the thousand, the value depending to a great extent on that of a sample of 5,000 lifted in the early part of the fishing. The contents of the mollusk being allowed to decay before the pearls can be obtained, the stench is horrible. The congregations of pearl-dealers, petty traders, official subordinates, and laborers on the shores, are enormous.

About the island of Borneo there is a good deal of fishing for pearls, which are found in a thin, flat, pinkish-shelled oyster, known locally as *salesiep*. This lives only in shallow brackish water at the mouths of rivers. Several boats rendezvous at the same time and place to frighten the crocodiles and sharks. Twenty or thirty persons will be in the water at once, diving, splashing, laughing, and shouting, and bringing up three or four shells at a time: extra yells from all hands salute a rather larger find than usual. Very few of the pearls obtained are of any value individually: they are chiefly seed-pearls, which are sent to China, where they are pounded up, made into powder, and this is swallowed by ladies who desire to improve their complexion; at least, such is the story. From British North Borneo the value of the pearls exported in a year is £500. Pearls of a very high price are not infrequently to be bought at Sandakar, but they come principally from the islands of the Sooloo Archipelago. The largest ever seen there was valued at £1,600.

The formation of pearls is not limited to the bivalves: they are produced on several univalves, especially on the *Strombs* and *Turbinellas*, but are more rare in these than in the bivalves. About the Bahamas group of islands and keys, the shells of the king, queen, and common conch were much sought after for sale to the cameo-cutter, but the fashion for cameo jewelry has passed away. The common conch is the ordinary pink-mouthed shell so frequently seen in milk-shops. It furnishes the rare pink pearls, so much appreciated, and these are exported from the Bahamas to the value of about £3,000 annually. Some fine collections of these pink pearls, set and unset, were shown at the Fisheries and Colonial Exhibitions in London.

It was once thought that no other pearls than those produced by the pearl oysters could obtain a rank among gems; but some of the river-pearls found in species of mussels (*Unios*) compete closely with those from the *Mollusca* of the ocean. These river-pearls are found widely diffused in France, Saxony, Bavaria, Bohemia, and Silesia, as well as in the lochs and rivers of Scotland, Ireland, and Wales. In China, the rivers of Manchuria furnish a good many. Delegates from the royal household look out for the best of these pearls there for the ladies of the imperial court.

In many of the Scotch rivers old men, women, and children may be seen wading about the shallow fords; and, when they discover a collection of mussels, they thrust down long sticks split at the ends, and bring up the mussels wedged in the slots. In the shallow waters of the Dee, the boatmen look down into the water with a tin having a glass bottom, and when shells are discovered, they are brought up by a kind of dredge, or scoop, and frequently some fine pearls are obtained.

These pearl mussels are also found in most of the small streams of the Province of Quebec, and in the districts bordering on the lower St. Lawrence. The streams most abounding in pearl mussels are but little known, except to Indians and backwoodsmen, who are careful in guarding the secret of where these mollusks are found.

Occasionally a party of pearl-seekers may be seen paddling in a bark canoe, and portaging through a very wild region. After opening several thousand mussels, they will only succeed in securing a few good pearls. These vary in color from white to dark brown: the white are appreciated for their rarity, and the pink on account of their peculiar brilliancy. In form they are generally round or spherical, and have a hard skin with an iridescent or nacreous hue.

It would lead to too much detail to pass under review the various pearl-fisheries of the Australian coasts, the Eastern Archipelago, and the Pacific Islands, where the unclothed native divers have to brave the attacks of sharks, cephalopods, and other dangers. They especially dread the stings of the jelly-fish, which they say are speedy death to them. Enough has, however, been stated to show the importance of this wide-spreading industry of hunting for gems and precious stones. Fine collections of these are frequently brought before the public to feast their eyes on, as at the recent Colonial and Indian Exhibitions in London, and those at Amsterdam, Paris, and elsewhere.

At the Fisheries Exhibition in London, a firm of Parisian jewellers showed, among others, a very choice five-row necklace of 355 selected Oriental pearls, weighing 2,570 grains; a matchless and unique necklace and parure of Scotch pearls; a very important black pearl necklace, composed of 39 pearls, weighing 1,020 grains; a round pearl of 96 grains, being one of the finest pearls known, and worth £20 a grain; a very important collection of Oriental pearls, composed of 3,345 grains original, such as are most prized in Bombay, besides black, pink, yellow, and gray fancy pearls.

MENTAL SCIENCE.

Recent Observations in Hypnotism.

THE great attractiveness that the study of the varied and interesting phenomena of hypnotism possesses for the French physicians has been often noticed. Not a month passes without some new and often startling contribution. The leaders in this movement are eminent scientific specialists, and have been cautious about accepting all the strange doings of excitable subjects as perfectly genuine. They appreciate the readiness with which a shrewd patient can deceive the unsuspecting observer, and insist upon the most exacting tests, arranged with a full knowledge of the sources of error to be eliminated. Under such a scrutiny, many alleged marvels have taken on a less miraculous aspect, and many startling interpretations shown to lack validity. Amongst the oldest claimants to scientific recognition in this field is the statement that a magnet has a peculiar effect upon hypnotic subjects. Sometimes the application of a magnet causes trembling and tingling; again it is said to produce contractions of limbs, and cause such a contraction to pass from one side of the body to the other; and so on. Professor Delboeuf, a successful observer in this field, has very ingeniously tested these claims, and made much progress towards showing their falsity. He experimented upon a boy of fourteen, an experienced hypnotic subject susceptible to 'magnetic' influence. In the preliminary trials Professor Delboeuf had a true magnet and a wooden magnet made to look alike, and each fitting in a case alike for both magnets. He handed the boy the case containing the true magnet, but nothing happened: as soon as the magnet was drawn out, he developed a violent contracture, his usual symptom.

Next, Professor Delboeuf had three steel bars made exactly alike, two of which were strongly magnetized, and the third not. He gave the boy a real magnet, and asked him whether he felt any thing. After an exploring glance of from thirty to forty seconds, the boy felt tingling sensations, then pain and the usual symptoms. The same was done with the other hand, and he was shown that the bar was a real magnet. Professor Delboeuf then drew the false magnet from his pocket and gave it to the boy : no effect followed. Then the third (true) magnet was given him, with the request that he should say whether it was a magnet or not. No contraction followed ; and from now on, the boy had no clew as to the true or the false magnet. Fourteen trials were made, consisting simply in giving the boy a bar, and noting the result. In eleven of these trials he either exhibited the contraction when holding the false magnet, or failed to exhibit it when holding a true one; thus showing most conclusively that all the effects were self-induced, and suggested by his belief that a magnet was being applied. The same was repeated with another subject, with a like result.

Professor Delboeuf similarly tested the powers of the hypnoscope, which is simply a small hollow magnet to be held on the finger, and, when thus giving rise to peculiar sensations, is claimed to show that the holder is a good hypnotic subject. Three hypnoscopes were made exactly alike, only two of which were magnetized. Of fifteen university students, three claimed to feel glowing sensations from the instrument, and one of these felt it all the way up to the shoulder. Strangely enough, this young man held the false hypnoscope, and on trial proved to be the best subject. The conclusion drawn is, that the hypnoscope is useful in detecting hypnotic subjects, not because of any magnetic sensibility, but because persons of such a susceptible temperament as to imagine sensations from it furnish one of the chief requisites for passing into this condition.

Dr. Voisin indorses this same general view. He has repeated the noted Paris observations, in which the mere approach of an hermetically sealed vial containing a certain drug affects the hypnotized subject in the same way as a strong dose of the substance in the normal state. He finds that if the utmost precautions against talking to his assistants, and other modes of suggesting the expected effect, are taken, the result is negative, and concludes that in his subject a wonderfully shrewd appreciation of suggestions accounts for all that was exhibited. He finds, too, that the application of a magnet unknown to the subject had no effect, while she is extremely sensitive when she knows a magnet is about.

Dr. Bernheim has described some remarkable cases in which the mere suggestion of a certain idea in the waking state serves to impress this idea with a lifelike reality. His subjects are young men of neurotic temperaments in their ordinary waking condition. One patient was told that a certain physician attacked him on the street and picked his pocket. He at once accepted the tale, added details of time and place, and no amount of questioning would get him to give up the notion. Turning to another patient, Dr. Bernheim asked whether he knew any thing about it. The suggestion was sufficient. The subject of the attack had told the second patient all about it in the morning, and so on. The same delusion was passed on to several patients, and accepted. These observations show a connection between what occurs in the hypnotic state and the phenomena observed in weak-willed persons. The possession by a dominant idea imposed by another or suggested by circumstances is the common mark of many of these semi-abnormal states. They also show how easily such people can be utilized for base purposes; and Dr. Bernheim believes that the son of the sexton in the famous Tisza-Eslar affair (who claimed to have seen through the keyhole the cruelties on which the trial was founded) was a case in point.

In this connection it may be added that there is a growing sense of the great danger to which this subject is liable at the hands of amateurs. Examples of its pernicious effects in individual cases are accumulating, and a most celebrated French alienist recently expressed himself thus: "Hypnotization is not as harmless as it has been made out to be: the hypnotic state is closely allied to the hysterical neurosis, and, like the latter, it may in some cases become markedly contagious. If medicine in the name of science and art has taken possession of hypnotism, it should keep it within the strict limits of its own domain, using it as a powerful therapeutic agent, and never letting it pass into profane hands, where it is liable to be abused to the detriment of the public health.

HEALTH MATTERS.

Precautions against Cholera.

IN view of the possibility of an attack of cholera during the coming year, we deem it appropriate to quote below from the recommendations of the sanitary conference held at Washington in 1884, in anticipation of the arrival of cholera: —

First, That all surface wells should be closed at the earliest possible moment, and that great care should be taken that the water-supply of all cities, towns, and villages shall be of undoubted purity.

Second, That all privy-vaults should be abolished wherever water-closets can be supplied, and that, wherever the existence of such vaults is necessary, they should be rendered water-tight in such a manner as to prevent the saturation, not only of the ground surrounding them, but also of the materials of which they are built, and that the contents of such vaults should be kept constantly disinfected, and removed to a proper place at frequent intervals.

Third, That all stagnant ponds, when practicable, should be disinfected, and when possible the water removed by drainage or pumping, and the further accumulation prevented by filling with fresh earth, or other material free from garbage or other filth.

Fourth, That great care should be exercised to keep at all times clear and free from obstruction all sewers into which passes the refuse from dwellings, factories, and other buildings, and that such examinations should be made as will detect imperfect plumbing in all buildings, and the defects immediately corrected. In this connection special attention is directed to the necessity for the thorough ventilation of all soil and waste pipes, and to the dangers connected with untrapped and unflushed soil-waste and overflow-pipes.

Fifth, That extraordinary care should be exercised in reference to all tenement-houses, lodging-houses, and in general all places where large numbers of human beings congregate; that no accumulation of garbage or other filth be permitted in cellars or yards; and that frequent and thorough cleaning and whitewashing of such structures be required; and that householders should frequently and thoroughly examine their yards, cellars, closets, and other out-of-the-way places, to see that no filth of any kind has been deposited there.

Sixth, That the food-supply be vigorously watched to exclude from the market all unwholesome meat, all milk adulterated or from diseased animals, and all unripe fruits and vegetables; and that cow-stables be kept at all times clean, well whitewashed, and free from all excremental accumulations.

Seventh, That all garbage, kitchen and household refuse, should be promptly removed from dwellings, stores, and other buildings, to a proper place, where it may be destroyed by fire, or otherwise disposed of in such manner as to occasion no nuisance.

Eighth, That such material should never be used in the filling of lots, or disposed of by throwing the same in streets or vacant property, where it may decompose and exhale offensive and deleterious gases.

Ninth, That the attention of the authorities of all institutions, both public and private, and of individuals as well, be drawn to the great importance of maintaining a habit of personal cleanliness in the persons under their charge, as being one of the most efficient means of warding off an attack of cholera, or, if it has once appeared, of greatly reducing its virulence and fatality.

Tenth, Should the cholera appear in any place in this country, the health authorities of the place should have immediate notice of the first cases, in order that prompt action may be taken for complete isolation and disinfection.

Eleventh, That all authorities of states, cities, or villages be urged to adopt measures which will result in the amelioration of all conditions such as have been referred to in the foregoing propositions, with the warning, that, in the opinion of this conference, such conditions, if permitted to continue, will greatly promote the spread of cholera when it comes, and with the assurance, that, if requisite