lowing the advice of some friends, the man went to Pasteur to be submitted to his treatment according to the new method, which was explained in a recent 'Paris letter' to *Science*. Matters progressed favorably till the 12th of December (the accident was early in November). On that day Réveillac felt pain, at first slight and afterwards more severe, in the points where the inoculations had been made, while no pain was felt in the bitten finger. This important point was testified to by the patient himself and by the persons who lived with him, and it has been corroborated after careful investigation.

Following this pain were other symptoms, prominent among which was a general feeling of restlessness and great weakness. The weakness was so great, even on the first day, that the patient, on being advised to visit Pasteur and ask for relief, answered that he wished to, but felt utterly unable to do so. The second day the weakness increased, and the patient could hardly eat. He died on the 16th of December. During the last two days of the illness, the attending physicians witnessed symptoms in the throat of an impossibility of swallowing liquids. There were no convulsions, but only weakness and paralysis.

Professor Peter called attention to the facts, first, that the premonitory pain was not in the finger where the original poison had entered, but at the points where the inoculations had been made; second, that the other symptoms had not been those of common rabies, but of experimental hydrophobia. Instead of convulsions, paralysis was the principal symptom.

A discussion followed the reading of the paper, and the objections were made that it was by no means certain that Réveillac had died from rabies, that paralytic rabies is very rare among men, and that many symptoms of that disease were wanting. Professor Peter's criticism is, however, interesting, and is likely to attract attention. It is unfortunate, however, that we have no certain proof that Réveillac died from the inoculations. If care had been taken to inoculate animals from the tissues likely to be most affected in the patient, we should have had a better basis for deciding on the merits of the case.

THE RUBY-MINES OF BURMAH.

FOR some time past a considerable share of European political and military interest has centred in south-eastern Asia. The fact that in at least one of the countries of that region, Burmah, precious stones are reputed to be found in great quantities, will attract attention of a different order. In view of the report that British troops were about to take possession of the Burmese ruby-mines, a correspondent of the London *Times* has furnished that journal with a description of them and an estimate of their probable value.

It seems that most of our information concerning these mines comes in a more or less amended form, from the account of Tavernier, — information of two hundred years ago, to be sure, but still the basis of all subsequent accounts. He describes the place where the rubies are obtained as "a mountain twelve days' journey or thereabouts from Siren (i.e., Siriam) towards the north-east, and it is called Capelan (i.e., Kyat-pyen). It is the mine whence is obtained the greatest quantity of rubies, spinelles, or mothers of rubies, yellow topazes, blue and white sapphires, hyacinths, amethysts, and other stones of different colours. . . . Siren is the name of the city where the King of Pegu resides, and Ava is the port of the kingdom. From Ava to Siren you ascend the river in large flat boats, and it is a voyage of about sixteen days. You cannot travel by land on account of the forests, which abound with lions, tigers, and elephants. It is one of the poorest countries in the world: nothing comes from it but rubies, and even they are not so abundant as is generally believed, seeing that the value does not exceed 100,000 crowns per annum. Among the multitude of these stones you would find it difficult to meet with one of good quality, weighing three or four carats, because the king does not allow any to be removed till they have been seen by him, and he retains all the good ones which he finds among them."

Two other authorities, men who have visited these mines during this century, are Father D'Amato, who saw the mines about 1830, and a Mr. Bredemeyer, who was in charge of mines in the vicinity about 1868.

Father D'Amato's account is that Kyat-pyen is situated about seventy miles to the north-east of Mandalay. The gem-gravel occurring there was reached by pits of from twenty to thirty feet in depth; but extensive working, owing to the influx of water, was impossible with the primitive methods followed by the miners. Besides rubies, sapphires, topaz, and oriental emeralds were also found, and spinelles were abundant. All stones above a certain weight became the property of the king, provided they were not stolen and smuggled away. Facilities for this were, however, afforded by the visits paid to the mines annually by merchants from China and Tartary.

Still more recent visitors to Mandalay have found that the majority of the rubies found are less than a quarter of a carat in weight, and the larger ones are generally flawed. Sapphires,

though rare, are occasionally found of from nine to thirteen carats in weight and without flaw. The revenue from these mines, which has been a royal monopoly, amounted in 1856 to about fifteen thousand pounds sterling annually.

As to the benefits to accrue to the new owners, the *Times* correspondent is sceptical. He says that to sanguine minds the prospect may appear tempting, and it may be thought that with proper mining appliances, and under British management, these mines might be made to yield a rich return. It may prove to be so, but "experience in India and Ceylon under more favorable circumstances of position does not justify that conclusion."

BRITISH CENTENARIANS.

THE British medical association assigned to one of its committees the task of inquiring into the medical history of the very aged. In answer to their widely distributed circulars, they have received a large number of records; and, of these, fifty-two cases refer to persons claiming the age of one hundred years or over. The detailed tables with regard to these fifty-two centenarians are published by Professor Humphrey, F.R.S., in a supplement to the *British medical journal* (Dec. 11 and 25, 1886). It is not meant to be implied that all these cases are beyond question: in only eleven cases (two males and nine females) was the age confirmed by baptismal or other records; and in the rest of the cases one can safely say that they were very, very old. It is satisfactory to find that in these tables the well-known pride of longevity and love of exaggeration have not induced any one to claim so high an age as 110: 108 and 106 are the highest ages recorded.

Thirty-six of these fifty-two are women: this excess undoubtedly indicates that females are more apt to reach these extreme ages than men; but it also indicates that females are more apt to lay claim to extreme longevity, and the ratio of 36 to 16 must be discounted accordingly. The average age of females, as well as of males, is slightly over 102 years; 11 were single (of these, 10 were females), 5 were married, and 36 widowed. The average age of marriage for the men was 31 years; for the women, 25 years. The average duration of married life for the former was over 54 years; for the latter, over 33 years. The average number of children was about six: only one male and one female had no children. The centenarian has a tendency to be among the first-born children: in thirty-eight returns his average position is about the second or third child, and in twelve cases is he the first (and in two of these the only) child. Only 3 of 49 spent their lives in affluence; 28 were in comfortable circumstances, and 18 were poor. The returns of their past condition show a remarkable unanimity as regards their health: they are a robust race, and spare as opposed to stout. They are not subject to ailments, as a rule, and show some remarkable cases of recovery in old age. One had epilepsy from 17 to 70 years; another an abscess connected with the spine, a stiff knee from injury at 50, and other troubles; a third had acute bronchitis at 95; and a fourth, paralysis at 90.

The qualities most frequently mentioned in these life-histories are a good family history; a well-made frame of average stature; an equable development of all the organs, including especially a good digestion, ready sleep, keen but not large appetite; retention of the hair and teeth; and little use of stimulants. Their habits, on the whole, show them to be, as a class, early risers, great out-door exercisers, and moderate in all indulgences.

The average height of the males is 5 feet 8½ inches, and their weight 138 pounds; of the females, 5 feet 3 inches, and their weight 129 pounds. Twenty-two report good hearing, and 34 good sight. Of 35, 28 use glasses, and 4 of the other 7 probably could not read. Fourteen describe themselves as placid in disposition, 8 as irritable, 11 as energetic, 8 as placid and energetic, and 5 as irritable and energetic. Of 46, 29 are reported as possessing average intelligence, 5 have low and 11 high intellects. The memory for recent events is good in 26, bad in 6, and moderate in 7. Similar figures for the memory for past events are 39, 4, and 4, showing the greater tenacity of early associations. One "remembers and will quote a great deal of the Bible;" another could "repeat about one hundred Psalms correctly." Of 45, 7 smoked much, of which 4 were women. The average time of going to bed was 9 o'clock, and of rising 8 o'clock. The average chest girth in inspiration was 36½ inches in the men, nearly 31 inches for the women; in expiration, 36½ inches and 30 inches. The slight differences indicate a weakening of the respiratory activity. The average pulse is 75, and the respiration 24, per minute. Of 42, 24 had no teeth; among 37 cases, there were 144 teeth, of which 63 were in the upper jaw (19 incisors, 8 canines, and 36 molars), and 81 in the lower jaw (23 incisors, 13 canines, and 45 molars). Evidences of debility are, of course, not rare: they occur in half the cases, and are connected with the heart in two cases, with the heart and lungs in 3, heart and urinary organs in 3, with the lungs in 2, with the brain in 3, brain and urinary organs in 1, urinary in 4.