commencing in the brachial plexus and extending to the cervical plexus and to the intercostal nerves, is suggested by the way in which the lesion commenced, and by the evidences of trophic disturbances which showed themselves on the fingers of the paralysed hand. This view, however, cannot account for the partial implication of the sensory division of the left fifth nerve, except, indeed, we were to admit the possibility of an extension of the neuritis *per contiguitatem* to some fibres of the fifth nerve which communicate on the face with branches of the cervical plexus.

ART. XXI.—*On Some Antiseptic Experiments in a Mortuary Vault.*^a By CHARLES A. CAMERON, M.D., F.R.C.S.I.; Vice-President of the Institute of Chemistry of Great Britain and Ireland, &c.

THE antiseptic properties of the mortuary vaults of the Church of St. Michan, Dublin, are well known. The bodies of persons placed in them appear to undergo a species of desiccation rather than of putrefactive fermentation and decay. There are mortuary vaults in other parts of the world in which a similar partial preservation of bodies takes place.

It has not been proved that the antiseptic properties of the vaults of St. Michan's Church are due to the excessive dryness of their atmosphere, or to the nature of the soil, or to any other assumed or suggested cause. I am not now going to discuss this question further than to suggest that the antiseptic properties of the vaults may be due partly to their undoubted dryness, partly to the great freedom of their atmosphere from dust. Some years ago it occurred to me that it would be desirable to ascertain whether or not the fermentation of unstable infusions of organic matter would take place as readily in these vaults as in ordinary places. Accordingly I made the experiment, of which the following are the details and results:—

An infusion of melon in distilled water was prepared; a portion of it evaporated to dryness left a solid residue amounting to 0·84 per cent. This liquid was introduced into eighteen of Tyndall's tubes, and the contents of the tubes were sterilised. This process was effected in the following manner:—The tubes were immersed for half an hour in a paraffin bath heated to 300° Fahr., and whilst

^a Read before the Sub-Section of State Medicine of the Academy of Medicine in Ireland, Thursday, April 10, 1884.

at this temperature their orifices were sealed by means of the gas blow-pipe. It was concluded that by this treatment the spores or ova of any organisms that might have existed in the infusion were rendered incapable of further development. The tubes were kept intact for a week. On the second day the contents of two of them became very slightly clouded, and on the sixth day quite opaque from an abundant development of mycelium. It was clear that the contents of these tubes escaped being sterilised. The contents of the remaining tubes were perfectly clear. On the seventh day four of the tubes were opened by breaking the ends of their long, narrow necks, and the air of the laboratory allowed free access to them. In two days their liquid contents became clouded, and in about a week's time they became so thick that they could not be poured out.

On the eighth day the remaining twelve tubes were arranged in a stand, and placed in one of the vaults of St. Michan's Church. The Rector, the Rev. Mr. Long, kindly entrusted to me the key of the vault, which I kept until the completion of the experiment. I selected one of the driest of the vaults. My *modus operandi* in depositing the tubes was as follows:—I opened the door of the vault as gently as I could, and passed gently into the portion most remote from the door, and I remained as motionless as I could for a space of about twenty minutes. I then lighted a spirit lamp, and having heated a pincers in the flame, I nipped the necks of ten of the tubes, so as to expose their contents to the air. I then emerged from the vault as quietly as I possibly could. The slowness and gentleness of my movements were, of course, with the object of disturbing the air of the vault as slightly as possible.

No person entered the vault after this procedure until six weeks had elapsed, when, on the day of 13th August, 1879, it was again invaded by myself. On this occasion I was accompanied by Dr. E. Lapper, Lecturer on Chemistry in the Ledwich School of Medicine. We removed the tubes to the open air, and examined them. In five of them the contents were very opaque and mucilaginous. The contents of the remaining seven tubes were quite clear, and exhibited no signs of fermentation. Two of these tubes had remained sealed. These tubes were conveyed to the laboratory of the Royal College of Surgeons, where, in the course of a few days, their contents became turbid and mucilaginous.

I hesitate somewhat in drawing any positive conclusion from this experiment. The results certainly show that an organic

infusion remained without undergoing fermentative changes for a period of six weeks during warm weather. What was the cause of this stability? It was clearly not due to the air of the vault being dry, for the object preserved was a liquid. It would seem to be due to the comparative freedom of the atmosphere from floating particles. The stillness in the vault is remarkable. The dust which enters it soon settles down gently. But, then, five of the tubes contained turbid liquid. It is evident that germs from the air found their way into these tubes through their narrow necks. The air, then, was not quite free from floating germs. On lofty situations in Alpine regions Tyndall found the air so pure and free from dust that organic liquids exposed for months to the air remained unfermented. It may be that the air in the vaults of St. Michan's Church is very free from dust, and that it is owing to this cause that organic matter does not freely decompose in them. I am disposed to believe that, in the case of dead bodies, the dryness of the air is a factor in the preservation of the bodies. A coffin containing a body was removed from the soil of a graveyard, and deposited in one of these vaults. It was soon covered with large masses of moulds. After a while the damp coffin became dry, and in process of time the moulds, the natural habitats of which are damp situations, disappeared.

In conclusion, I venture to think that the results of my anti-septic experiments in a mortuary vault, long unpublished, are sufficiently interesting to warrant my bringing them under the notice of the Academy of Medicine. I trust that the recital of them may induce other persons to institute experiments in these very interesting vaults.

ART. XXII.—*Remarks on Some Cases of Bronchitis.*^a By GEORGE ST. GEORGE, M.K.Q.C.P.I., L.R.C.S. Edin.; Surgeon to the County Antrim Infirmary.

BRONCHITIS is a very prevalent complaint, and not only is it of frequent occurrence in different persons, but one of its chief characteristics—and perhaps its most formidable one—is its great tendency to recur again and again in the same person, and often at the same periods of time, the attacks increasing in severity and duration from year to year, until at length the sufferer is scarcely

^a Read before the Ulster Medical Society, January 8, 1884.