2. *Official Handbook of Duties of a "Ship Surgeon."*—The Marine Department should print and circulate a pamphlet stating the duties of a medical officer of a ship as to sanitary powers, inspection of food, clothing and lodgement of the crew or passengers, a *précis* of quarantine regulations and of the tests for physical efficiency of officers and men of the merchant service.

3. *Examination in Details of above Handbook.*—The Marine Department to be responsible that all medical officers know the details of the above book and to issue certificate to that effect to applicants after test by the superintending medical officers, Board of Trade, at the great ports.

4. *The Marine Department to Issue Annually an Official List of Effective Medical Officers for Ships.*—The names of officers qualified under Section 3, paragraph above, to be printed annually in a list, and the local representative at the great ports of the Board of Trade to be empowered to issue emergency certificates of efficiency effective for the current year of issue.

5. *Report on Health and Sanitary Condition during the Voyage.*—The medical officer to send in a report on the health and sanitary condition of the crew and passengers of the ship at the end of the voyage.

6. *Scale of Male and Female Nurses to be Laid Down.*—A scale of trained male and female sick attendants to be laid down by the Marine Department for each passenger ship, if not now done; efficiency reports to be sent in by the medical officer of the ship.

7. *Definition of Hospital Space Allowed and its Equipment.*—This to be done if not now done.

8. *Medical Officers' Quarters and Dispensary Space.*—This to be specially considered—often very defective.

9. *Misconduct.*—All reports of misconduct or drunkenness to be sent on by the Marine Department to the General Medical Council for disciplinary action if considered needful, or certificate to be withdrawn in minor cases.

10. *Model Agreement.*—A form of model agreement might be laid down by the State.

11. *Pay.*—Pay, unless otherwise fixed, to be same as surgeons Royal Navy.

12. *The Physical Health of the Medical Officer.*—A medical certificate of health is needed for the medical officer, to prevent medical invalids from taking up the work unless actually fit.

13. *Conduct.*—A medical man applying to the Board of Trade for approval should produce certificates of character from two or more medical men, in affidavit form—to ensure thorough accuracy—and these certificates to be not more than six months old. This is essential, so as to exclude defective types of medical men.

Finally, the public are travelling more year by year. Frequent complaint is made of inefficiency in certain cases of medical officers of ships. It is well nigh impossible for any private organizations to regulate the medical service of passenger ships; that is, in my opinion, essentially the duty of the official marine authorities of the Board of Trade.

EAR COUGH.

MR. GEORGE HAMILTON, M.B., B.S.Lond. (Chichester), writes: Mr. Arthur Barford's case, recorded under the above heading in the BRITISH MEDICAL JOURNAL of February 14th, p. 368, while illustrating the physiological fact of clinical interest, seems to have moved him to an explanation thereof, too vague to carry conviction.

The connexion of Arnold's nerve with the vagal ganglion of the root is well known, but the suggestion that "irritation conveyed to the trunk of the vagus by Arnold's nerve and then referred to the respiratory tracts which are supplied by that trunk" possibly causes the cough, is hard to follow. The stimulus due to irritation of Arnold's nerve must reach the "respiratory tracts" either as a sensory or a motor phenomenon, if it reaches them at all. The former alternative seems negatived by the fact that the sensory vagal fibres are centripetal, and so the impulse could not reach the "respiratory tracts" as a sensory impression and thereby provoke a cough. If, however, stimulation of the sensory Arnold's nerve produces a motor impulse travelling to the "respiratory tracts" by way of the spinal accessory fibres of the vagus nerve, doubtless closure of the glottis would occur, but that is not a cough.

Mr. Barford has overlooked the fact that the diaphragm and abdominal muscles are essential to the production of a cough, as section of the cervical cord above the origin of the phrenic nerve demonstrates. So then the only explanations possible are:

1. That the impulse travels direct to the vagus nucleus (avoiding the respiratory tracts, except for reflex closure of the glottis) and thence the various muscles are stimulated by impulses travelling along the appropriate paths; or

2. That the impulse, reaching the vagal ganglia, travels thence as a motor impulse to the laryngeal muscles per vagum, and to the diaphragm per communicating branches to the cervical plexus.

Certainly stimulation of the "respiratory tracts" appears out of the question as the cause of the cough.

THE PATHOLOGY OF CANCER.

DR. J. BARKER SMITH (Herne Hill, S.E.) writes: The letters of Drs. Shirlaw and Jackson Clarke in the JOURNAL of March 7th with respect to cancer have made me bring forward some laboratory notes which concern the question of metabolism. Gautrelet in the work reviewed by you a few years ago, *Physiologie Uroséméiologique*, speaks very positively of a lowering of the fixed elements of urine, and especially of the acidity and urea, in the absence of peptone, as indicating the cancer diathesis. So from the investigations of Dr. Elsie Royle, *The Urine in Malignant Disease*, we gather the same, associated with a higher uric acid percentage. Joulie, in his *Urologie Pratique*, says he has always found hypoacidity in all cancer cases examined by him. His "acidity" would relate to the blood acidity, determined by lime water or sucrate of lime. He also argues our duties in diathesis and in recidive cases. In following my work of urine analysis the last year or two this outlook of changed metabolism has made me think—What suggestion does the daily urine of patients with malignant disease offer of a change of metabolism in the absence of the "biological standard" of two of these authors, so difficult to obtain? In my list of pathological urine analyses, amounting to twenty since the beginning of this year, I am keeping account not only of the "blood acidity" and the salt, but of the various coefficients or relative percentages. For example, the specific gravity terminals are largely due to salt and urea, hence if uric acid be higher, as suggested, in the urine of malignant cases, such uric acid used as a dividend and the terminals as a divisor should afford some suggestion of the lowering of solids; where salt is lowered the quotient should be still higher. Taking the 20 cases of pathological urine analysed by me for other doctors I find that the quotients give a gamut from six to forty in the third decimal place, when the uric acid is divided by the terminals of the specific gravity. Take, for example, the highest quotient, prima facie the most suggestive, 0.5 per 1,000 uric acid, terminals of specific gravity twelve, quotient 0.041. Sodium chloride is 0.4 per cent. The lowest quotient, namely, 0.006, is uric acid 0.2 per 1,000, terminals thirty (1030). Salt, 1.1 per cent. The next important percentage relation, the lower the most suspicious, is that of total phosphates, in terms of phosphoric anhydride, as a dividend and the uric acid as a divisor, suggested by the work of Dr. Elsie Royle. Here my total cases give whole numbers from two to fourteen. The two cases above give respectively: The high quotient, phosphoric anhydride 1 per 1,000, uric acid 0.5, quotient two; the low quotient, phosphoric anhydride 3.5 per 1,000, uric acid 0.2, quotient seventeen. Such show the extremes of the gamut for the 20 cases. Also we notice that three simple experiments only are needed to continue in definite cases such investigations, namely, specific gravity, phosphoric anhydride, and uric acid.

CLINICAL ASPECTS OF ANAPHYLAXIS.

LAY CORRESPONDENT writes: In the JOURNAL of November 22nd, 1913, p. 1358, Dr. E. W. Goodall, in his paper on anaphylaxis, says he is not sure that we know of any article of diet except shellfish (mussels, crabs) and a few fruits (strawberries, raspberries) which is capable of producing anaphylaxis; and Dr. R. Broadbent, in a memorandum in the JOURNAL of January 3rd, cites a case in which anaphylaxis was produced by milk powder. It may interest both these gentlemen to know that anaphylaxis has repeatedly been produced in two of my children by the following articles of diet. Elder child, now 5 years old, suffered from severe urticaria twice after taking oatmeal jelly, made according to Rotch's receipt (oatmeal then discontinued). Suffered twice after taking a teaspoonful of malt mixture prescribed by a children's specialist (malt then discontinued). Suffered twice after a cup of fresh goat's milk and once after fresh cow's milk (supplied by a well-known London milk laboratory, and therefore presumably pure).

The younger child, now 15 months old, has since he was weaned at 9 months had urticaria repeatedly after taking goat's milk and cow's milk, both whole and diluted with barley water. The rash is typically urticarial. It comes on immediately after, or even during, the meal. There are large raised patches on the body, but it is worst on the neck and face. Sometimes the oedema is so great that the eyes are nearly closed. The rash is accompanied by shivering and general malaise. The symptoms disappear in a few hours as a rule, but in the case of the attack following the oatmeal jelly the oedema did not subside for twenty-four hours.

I may perhaps mention that my eldest son, aged 8 years, has suffered from asthma from the smell of horses all his life. All three children are strong and healthy.

ERRATUM.

OWING to a printer's error, the letters F.R.C.S., F.R.S.E., were placed after the name of Mr. J. Beard, D.Sc., in the list of contents of the JOURNAL of March 7th.