not always found sufficient to give relief; but recourse was had to biniodide of mercury, and occasionally a leech was applied.

CASE XI. In November 1872, I saw with Dr. Langmore a patient who was the wife of a man who at the time had severe syphilitic rupia. She had had one miscarriage, and no living children; no syphilitic manifestations. Six months before I saw her, she had had paralysis of the right side of the face, and numbness in the right arm, which recovered in six weeks. She had been complaining of numbness round the mouth and the left arm, and she suffered from intense frontal headaches, which generally came on at three A.M. Sensation was found to be impaired in the left arm, and the grasp was weak. She walked well. Sensation was also deficient over the lower part of the right side of the face, in the area of the distribution of the two lower divisions of the fifth, the anaesthesia transgressing the median line about the mouth. The forehead, the tip of the nose, and the tongue were not affected. The sight was not good, and she was unable to read long; the optic discs were pink, striated by vessels, and the retinal veins were large, but there was no appearance of swelling, and the discs were well defined. The patient was taking iodide of potassium in doses of six grains, and it was agreed that the dose was to be gradually increased to twenty-four grains. This failing, mercury was to be tried. Here the cross paralysis, incomplete anaesthesia in the two lower divisions of the right fifth nerve, and weakness and impaired sensation in the left arm, pointed to a lesion near the apex of the petrous bone, or the adjacent part of the sphenoid, involving the two branches of the trigeminus after their departure from the Gasserian ganglion, and also the crus cerebri. Had the entire fifth nerve been affected, the seat of the disease might have been the pons. The severe pain led me to conclude that the disease had its starting point in the bone or dura mater, and I anticipated difficulty in affording relief. I learn, however, that she improved greatly under the iodide of potassium. She is liable to headaches, but there is now no paralysis.

[To be continued.]

ON THE MEDICAL SERVICES OF THE NAVY AND ARMY FROM THE ACCESSION OF HENRY VIII TO THE RESTORATION.

By WILLIAM R. E. SMART, M.D., C.B.,
Inspector-General, Royal Navy.

[Continued from p. 200 of last number.]

ALTHOUGH the College of Physicians was endowed with power to license surgeons, it is doubtful that it ever exercised that power in the formation of what would have been a body of general practitioners, such as was ultimately constituted by the union of surgeons and apothecaries. But the College, while disdaining surgery, laid vigorous claim to preside over the faculty of surgeons as an inferior medical body.

Thus we find that, in 1572, the great Dr. Caius, on the part of the College, contended in the Lord Mayor's Court, and obtained a decision, that, "it was illegal and unreasonable for surgeons to give inward remedies even in the treatment of sciatica, the great pox, ulcers and wounds," which was inconsistent with the every-day practices of the state services. In the year 1602, the College followed up this claim by prosecuting a surgeon named Jenkins, for illegal practice, when Judge Popham decided that "there is no sufficient license without the College seal; and that no surgeon, as a surgeon, might practice physick, no not for any disease, though it were the great pox."

It might be thought that this limitation by legal process would have satisfied the physicians, and have kept the surgeons from trespassing on medical practice. If it had the latter effect, it failed in the former, as the College next invaded the surgical field, by obtaining an Order in Council, dated June 13th, 1627, to this effect: "As concerning the surgeons, that none of them in the city of London, or within seven miles thereof, do either dismember, trepan the head, open the chest or belly, or cut for the stone, or do any great operation with his hand on the body of any man, woman, or child, to which they usually are tyed to call their wardens or assistants, but in the presence of a learned physician, one or more of the College of Physicians, or of his Majesty's Physicians." As far as concerns Londoners, this was a complete subjugation of the practice of higher class surgery under the College of Physicians, the corollary of which would have been the bringing back of many of the effete practices of the middle ages, for surgery can flourish only where free to experiment, while the medicine of that age bound its practitioners by the theories and dogmas of the schools.

The only safeguard from being blotted out that remained to surgery, lay in its stronghold of the army and navy, which it possessed almost alone, in which its followers practised, under the protection of the state, medi-

cine as well as surgery, being even provided with the means at the expense of the state; and these men, and those who benefited by them, became the strong assertors of the privileges of surgeons, counter to those of physicians. In the year 1635, "The surgeons suggested to the king, that no doctour would serve in His Majesty's navy, and therefore there was a necessity of their being licensed to practice physick." On this a College was called, when Drs. Hawley, Hamer, Goddard, and Dawson, announced their willingness to do this; but whether their services were availed of or not does not appear. It would seem that neither Lord Mayor's decisions, Bench judgments, nor Orders in Council sufficed to suppress the public demand for the attendance and treatment which surgeons could supply; as, in 1641, the College presented a bill for further protection to the House of Lords, against which the surgeons contended—"That if the surgeons shall be disabled to exercise their profession entirely on land, how shall they be able to practice the same at sea, or breed any for that service, wherein the charge of all, both sick and wounded, are upon them, without physicians or apothecaries:

"That surgeons have ever both practised and appointed physical remedies to the cure of all wounds, ulcers, imposthumes, great pox, fistulas, tumores, and all surgical diseases:

"That the surgeons in all times have served the king and the Commonwealth both by sea and land; and, to that purpose, His Majesty has constantly allowed to each surgeon, *monies for physical remedies for sick and hurt persons*; and now, by the bill, they shall be restrained to use their profession in giving internal remedies.

"That surgeons are dayly employed in voyages at sea, and in the service of merchants, where there hath been used no physician; and if by this Bill, they be restrained from administering physick to the patients here, they will be no way able to perform the trust reposed in them at sea, whereby many of His Majesty's subjects must perish for want of experienced surgeons."

In this we learn that the surgeons rested their claims to general practice on their tried utility in the naval service, which must have told in their favour; but whether that Bill became the law of the land or not, the College still maintained its vantage ground on land; but when the question was reopened, it was by the surgeons seeking to relieve themselves from their disabilities.

In 1689, a Bill was read and committed, having been ordered to be introduced by Sir T. Heathcote, "To enable surgeons to administer inward medicines to wounded persons"; and in 1690, another Bill was presented "For surgeons to administer inward medicines in cases of surgery." These Bills were strongly supported by petitions from the dockyard towns and by the shipowners of London. In reviewing this intestine war among the professors of healing, waged with bitter acrimony by the College of Physicians for the retention of their privileges of the Middle Ages, it is evident, when viewed by modern light, that surgery was weakened and retarded by the pretensions of a powerful and influential body that stood at the head of the profession.

In a paper published at the time, entitled "A short statement of the Case between the Physicians relating to the Surgeons Bill now before Parliament," there is a summary of the claims of surgeons.

1. Liberty to give internal medicines in all chirurgical cases.
2. That they may be consulted with by physicians in all cases whatsoever.
3. That the examination and licensing of all surgeons to practise in the manner aforesaid may be of themselves as sole judges of the sufficiency, etc.

And the reasons on which they rely—

1. That they have formerly had like powers;
2. That these powers are of absolute necessity, to fit them for the king's service.
3. That the physicians have till of late consulted with them in cases where internal medicines were to be administered.

In all this there is the impress of the needs of the army and navy in bringing about a great change in the profession itself. As it has been already shown that, by the same agencies, medicine became gradually freed from the church, and its organisation established; so here its internal reform was ultimately brought about by slow changes.

By studying the history of our profession, together with the graphic statements of Gale and Clowes concerning the medical services of the army and navy in that age, it can be understood how it happened that the company of barber-surgeons acquired paramount influence over these services, although it is rendered clear that the resources of the company were inadequate to the wants of the services, which were compelled to accept the offices of unlicensed practitioners.

There is no evidence that any physician took service in the navy prior to the reign of Elizabeth. William Clowes, in relating (1596) a case of fractured rib followed by pleurisy, in which he excised the

specula of bone that had wounded the lung, writes that "it happened at that time when the Emperor's daughter passed the narrow seas to marry with Philip of Spain (A.D. 1570), I serving then in one of her Majesty's ships called the *Aide*,"....."there was not at that time any physician in the navy to aide and assist me in this cure."

It has been shown that two years later (A.D. 1572) the College of Physicians began to raise the question against the practice of medicine by surgeons; and subsequently physicians afloat are referred to. Thus, in Cott. MSS., Otho, E ix, p. 235, among the expenses of an expedition that sailed from Plymouth under Sir Francis Drake and Sir John Norris (1589), we find an item "For sundry provisions for physick and surgery, with money imprested to *physicians and surgeons entertained*, £253:1:0." And in A.D. 1596, in the great expedition to Spain under Essex and Raleigh, Dr. Henry Atkins, Censor of the College, sailed as physician; but, suffering from sea-sickness, he returned from Plymouth, and Dr. Moundeford succeeded him. It is not clear, however, with which of the sister services they were connected; and the same reservation must be held with regard to the following list of Fellows of the College of Physicians employed in the Civil Wars; but it is almost beyond a doubt that in the reign of Charles I, Dr. William Harvey, Sir Thomas Caddyman, Sir John Hinton, Dr. Hamey, Dr. Goddard, Dr. Hawley, Dr. E. Dawson, and Dr. Charlton, appear to have served in the army; and under the Commonwealth and Protectorate, Dr. Paul Delaune, Dr. Nathaniel Chamberlaine, Dr. Sheaffe, and Dr. Cox, in both services.

It may be asserted from the foregoing data, that at the end of Queen Elizabeth's reign there were physicians as well as surgeons employed in our armies and fleets. The pay of a physician was 5s. per day; that of a surgeon in the army was 1s. 6d., the same as trumpeters and guidons (heralds); a surgeon in the navy does not appear to have been paid more than the chaplain, or the same as seamen, *i.e.*, 10s. a month. As the same persons were employed—like Clowes, for instance—sometimes in the army and sometimes in the navy, there must have been some means of equalising the emoluments of the twin services. It may have been that in the navy the gratuity of 2d. a month being deducted from the seamen's pay was certain, while in the army it was a personal payment, and therefore less certain. Again, in the navy, there was a monetary margin at disposal of the captains of ships under the designation "dead pays," or additional wages charged for men not on board, as perquisites in augmentation of wages to others. Of this we learn, from the Report of the Navy Commission in 1628 Charles I, that there was a "dead pay" on each ship in commission for each of the principal officers of the Navy Board; that admirals in command had twelve "dead pays", and captains eight, being wages of so many fictitious seamen for the payment of their retinues. Now it seems possible that, when captains had the appointing of surgeons to their ships, they may have supplemented their daily pay out of the "dead pay" allowance. But, besides this, it is probable that each surgeon received, by rule or custom, a "dead pay," as the same report allows the surgeon of the ordinary at Chatham £13:6:8 *per annum*, about 9d. a day, for all allowances, explaining—"To Chirurgion, etc., we add nothing but make their wages, rateable to that they have before. Onlie wee now shewe their faces, which then were but shadowed in 'dead payes'."

On this ground, I consider that all chirurgions of the extraordinary, or in commission, had at that time a perquisite on the "dead pay" list of the ship to which each belonged, which, together with the victuals, to which all on board ship were entitled *free*, made the emoluments of the navy-surgeon equal to those of the surgeon of the army. There would appear, according to that report of commission, to have been no changes in the pay of the navy between the days of Elizabeth and Charles I.

In the British Museum Collection, Add. MSS., there is an interesting document, No. 9301, fol. 6-7, from the principal officer of the navy to Captain John Pennington, concerning Peter Holloway, chirurgion of the *Isaac* of Ipswich, who was unfit in regard of health for further service at sea, and the only son of a widow, who was dependent on him, and had solicited his discharge. "To which request, in regard she hath no more children to help and comfort her, wee are the rather willing to condescend, and therefore intreate you to cause the said P. H. to be discharged and to *press* another in his roome, and so wee bid you farewell. Your loving friends." (With five signatures). This letter typifies well the condition of medical officers in the navy within one month of the death of James I, when preparing an expedition under Buckingham against Spain, and surgeons were to be obtained by impressment only, which was carried out by the hand of the Barber-Surgeons' Company.

[To be continued.]

ON THE VARIOUS PREPARATIONS OF KOUMISS AND THEIR USE IN MEDICINE.

By V. A. JAGIELSKI, M.D. Berlin,
Late Physician in the Prussian Army, etc.

THOUGH authorities may differ on other points of the subject, they all unite in the opinion that chronic diseases, and especially those of a consumptive or emaciating nature, are developed by antihygienic influences. Logically, then, to combat these diseases, and to cure them, particularly in their early stages, they must be treated with means which will correct or arrest the morbid impulse. Primarily, the atmospheric conditions which surround the patient ought to be suitably chosen; and secondly, but no less urgently, the diet must be so regulated, if possible, as to act the part of both "physic and food". In this relation, the practice of medicine is becoming more and more distinguished, in both its "science and humanity", by the importance which it now gives to dietetic remedies in therapeutics. We have in them facilities for the physiological and chemical treatment of certain obstinate diseases that resist purely remedial agents, and they are real handmaids of the greatest service to the practitioner. Chief of these remedies, and indeed epitomising them, is the milk of animals, because in its composition it comprises all the nutritive requirements of the body. Yet, perfect as milk is in all the elements of a facile alimentation, disease has oftentimes so enfeebled the digestive powers, that even it cannot be assimilated in sufficient quantity to maintain healthy life. Fortunately, however, there is a chemical sensitiveness in milk, which predisposes it to such physical and internal changes as will enable it to accomplish the prompt and perfect nutrition of the organism by overcoming the pathological obstacles. We have an example of this in the koumiss of the Tartars, which is fermenting mare's milk. Its magic effects are manifested in the robust constitution and the complexions of the nomadic people of the Russian Asiatic steppes, who during the warmer season live exclusively upon it, to recruit the health and strength which they have lost through the privations and exposures of the previous winter.

That milk will undergo vinous fermentation, and yield a certain quantity of alcohol, is not generally known. Every educated person, however, has heard that the Tartars drink the milk of their mares in a state of fermentation, called koumiss. Samara and Orenburg were the first places which were chosen for a resort of cure in chronic chest-diseases. To Dr. Stahlberg belongs the great merit of inducing the Russian Government to assist him in opening the first koumiss institution in Moscow, and afterwards in Tsarskoe Silo near Petersburg, the milk of mares being used which were expressly imported from the Tartar steppes; and it is from Vienna that we have heard recently of the great success of koumiss, introduced again by Dr. Stahlberg.

The milk of all animals is convertible into koumiss by one and the same method; but, as the several milks differ among themselves in the quantitative relation of their components, so also will there be corresponding variations in the koumiss which is produced from them. Qualitatively, however, the koumiss from different kinds of milk may be considered uniform, as has been shown in my special work on koumiss published in 1870, and in my paper in the *Milk Journal*, April 1871. More immediately in connexion with this paper, however, I present the analytical results of Wanklyn, obtained from cow's milk *medium koumiss*. A quart bottle of this medium or B koumiss* (manufactured in London by E. Chapman and Co.), which holds about 12,000 grains of koumiss, contains as follows. (It was examined when twelve days old; specific gravity, at 62 deg. Fahr., 10.28.)

Water	10,662 grains
Alcohol	192 "
Caseine and Albumen	128 "
Lactose	582 "
Lactic Acid	130 "
Fat	36 "
Ash	90 "
Carbonic Acid	180 "

12,000

The 90 grains of ash contain, approximately, 60 grains of phosphate of lime and 30 grains of mixed chlorides of sodium and potassium.

The three gradations of koumiss, designated as Nos. 1, 2, and 3, represent the irrepressible changes which it undergoes in time, while fermentation continues in the bottles. In the process of conversion of

* This analysis is not contained in J. A. Wanklyn's book on *Milk Analysis*, published by Trübner and Co., 1874, which gives only "Full" Koumiss tables.