substance, to the extent of from four to twelve grains in the twenty-four hours, without any apparent advantage. In this stage of the case, which was considered the "mere despair of surgery," I succeeded in getting on the tongue a quantity (five or six drops) of *croton oil*, which, in four hours, produced violent purging, with pain on pressing his boardlike abdomen, and much sickness, the more distressing from the rigid contraction of his maxillary muscles. But this effect was followed, in the night, by interruptions of the regularity of spasms and abatement of their violence; and on the 3rd of April the sufferer was evidently better. His sickness &c. continued to the 7th, with slow but progressive diminution of his tetanus. It must be added, that on the 4th, his purging having ceased, he received an enema, holding ʒij each of castor oil and spirit of turpentine, and ʒij of tincture of opium, with a purgative effect, and that on the following day he took, at three doses, six grains of opium. On the 8th his symptoms returned, with less violence however, and they were relieved by the administration of twelve drops of the *solutio muriatis morphinae*, and one of prussic acid, every second hour, to three doses, in the nights of the 8th and 9th. On the morning of the 10th, he had a distinct rigor, and from this time to the 16th he regularly went on to recovery, leaving me with a stump, having an exposed anterior surface of bone, of the extent of the thumb nail, from retraction of soft parts, which is now tolerably repaired by the granulating process.

The circumstance which has induced me to forward this case, is the fact of the immediate effect of the excessive dose of croton oil given on the 2nd of April, or about the 9th day of the disease. This proceeding was taken on the assumed principle, that two separate and important structures cannot be engaged in active disease at the same time, for certainly my artificial one might have been called *mucro-enteritis*, in degree. I may be mistaken in supposing my case and observations of any consequence to the profession. They are submitted, however, with diffidence, in the spirit of communication, and may appear worthy of notice in *THE LANCET*.

St. Columb, Cornwall,
May 1st, 1834.

ACUTE SMELL.—When Prof. Daumer, in Sept. 1828, walked with Caspar Hauser near a church-yard at Nuremberg, the smell of the dead in the graves, of which the professor had no perception, so affected Hauser, that he shuddered severely, suffered the heat of fever, and immediately had his sight obscured.

CASE OF

ANGINA PECTORIS,

TREATED WITH BLEEDING AND BEL-
LADONNA.

By I. THOS. BATTEN, *Esq., Southwark.*

I WAS requested to see David Gypm on the 9th instant, whom I found labouring under a severe attack of angina pectoris. He had previously enjoyed good health, and had not on retiring to rest on the previous night had the slightest occasion to anticipate a malady of this nature, but an hour after falling to sleep he was suddenly awakened by an excruciating pain about the region of the sternum, heart, and left arm, with an alarming sense of suffocation. This suffering was principally confined to the left side, and he exhibited one of the most distressing spectacles the eye could behold. His face and the whole surface of his body were pale and ghastly, and bathed with cold perspiration; countenance peculiarly anxious; power of articulation gone; gesticulations of the most agonising description, directed towards the heart and left arm; breathing irregular, with anhelation; mouth open; lips white as chalk; eyes turned upward, unnaturally disclosing the conjunctivæ; no pulsation at the wrist; action of heart powerful, intermitting, about 70 pulsations in a minute, the systole being distinguished by a sort of jutting energy towards the semilunar valves of the left side, and continuing much longer than the diastole; pulsation of carotids excessive, and synchronous with the ventricular vibrations.

There was no time for delay, and I therefore determined at once on venesection in preference to relying on remedies which had hitherto seldom been successful, even in the most skilful hands. Accordingly ʒxxx of blood were extracted from the arm, without however producing syncope, which I have reason to suppose could not in this individual be induced by any means, for some time ago I bled him for an attack of enteritis to the amount of ʒxl without giving rise to fainting, although the operation was performed while he sustained the erect position.

However, he now experienced decided relief; his frightful apprehensions of dissolution, the severe pain, the horrible sense of suffocation, and all his other distressing feelings, vanished in a moment, and he suddenly returned from a state of agony and torment to comparative ease. From this period he went on well, save that

he suffered slightly from debility, till the 17th inst., when I was again summoned to attend him for an attack exactly similar to the former, both in character and violence. I now repeated the bleeding to xxx , judging this as much as he could afford to lose, considering the previous bleedings and his spare habit of body. It relieved him as on the last occasion, but unfortunately not for a long period, the paroxysm returning with all its violence in about ten minutes. I had nothing now left but to try those remedies which seem best calculated to allay spasm.

R. Tinct. Opii, Spirit. Ammon. Aromat.,
aa. ss ; *Aquæ Puræ* zij . M.
Ft. mist. cujus capiat arger. part.
tert. sextam q. q. partem horam.

This mixture was taken without benefit. Friction by means of strong acetic acid was also tried in vain, and what is singular, without any diminution in the action of the heart, or tendency to sleep. I now gave two grains of *Eat. Belladonna*, mixed with water, every five minutes, till three doses had been taken, at the same time directing ss to be well rubbed upon the thorax. By these means the paroxysm was entirely subdued. I subsequently produced the effects of *Ung. Antim. Tart.* upon his chest, and he has enjoyed his usual health up to this time.

Pathological Remarks.—Angina Pectoris has been considered by some authors as a state of mere syncope, while others have attributed it to spasm, and some have supposed that it bears analogy to asthma; but these views have not been clearly established, nor have they hitherto thrown any light on its treatment, so that they have not furnished us with a single remedy capable of altogether subduing its paroxysm. Surely those who have thought it arose from syncope could not reconcile such a notion with the practice of depletion or the administration of narcotics! Asthma, too, has so little relation with the heart, that the idea of analogy to this malady is of no value to us. Those who have ascribed it to spasm have left us as much in the dark as their predecessors, since they have not been able to bring it under the control of either antispasmodics or narcotics. Thus was our great master, John Hunter, left in a state of irremediable suffering. Remote causes, to be sure, have been freely assigned to it, such as disease and ossification of the coronary arteries and great vessels about the heart; but this must be regarded altogether as conjectural, unless the changes of structure were met with in no other instances. The conversion

of these parts into bone is not a rare occurrence in aged individuals who have never suffered from angina pectoris. Besides, during an organic change so slow as that required for the conversion of soft parts into bone, which would so far affect the functions of the heart as to subdue it into quiescence, or suddenly reduce it into permanent contraction, the constitution must have suffered, or at least have exhibited some signs of approaching danger; and this change, too, once effected, being beyond the control of the healing art, has remained after the cure of the disease, which could not be the case if they stood in the relation of cause and effect.

This view of the matter and the treatment of the case I have above related lead me to say, that although the remote cause of the disease remains to be ascertained, there can be no doubt that the symptoms result from spasm, though the precise seat of that spasm is hidden. My experience (and I have notes of three cases besides the one in question) altogether tends to point to the right ventricle of the heart as its seat. Here it would prevent a sufficient supply of blood from being carried to the lungs to keep up their functional power, effecting congestion in the right auricle, and an accumulation of blood in the venous system, depressing the nervous system, and ultimately interfering with the respiratory muscles. This diminished flow of blood to the lungs and left side of the heart and its great vessels, would, by lessening the bulk acted on, increase the actions of the left ventricle, and thus cause the systole to be affected with greater force, and continued longer in its vibration, than the diastole. Evidence of this may be derived from the state of the pulse immediately after venesection in any case of congestion, I mean its rising.

If the case of David Gymp had borne analogy to "syncope," a loss of xxx of blood would certainly have destroyed life, or such inordinate doses of opium and belladonna would have entirely subdued the action of the heart; but no such result followed, and the only change that ensued was a state of comparative ease from pain, more equal vibrations in the arterial system, and a general cessation of all unpleasant symptoms.

If, then, the disease be of a spasmodic character, there must be several narcotics, which, by their power of relaxing the muscular fibres, would, if carried far enough in point of dose, negative this unequal contraction, and thereby terminate the paroxysm, which is all that could

be expected in a disease of a purely nervous origin, and therefore liable to return on exposure to the exciting cause. This is what I have endeavoured to show by the foregoing observations.

144, Tooley-street, April 29, 1834.

NEW THEORY

OF THE FORMATION AND NATURE OF TUBERCLES IN MAN.

At the last sitting of the *Academy of Medicine*, Paris, M. Breschet read an interesting report on this subject, of which the following is a resumé:—

Various opinions have been promulgated on the formation of tubercles. Some regard them as products of inflammation; by others they are attributed to a peculiar action, which is not inflammatory; and some physicians refer the origin of tubercles to parasitical animals of the family called by M. Bory St. Vincent, *psychodaires*.

M. Kuhn, of Niederbroun, adopts this latter opinion. According to him, tubercles are originally nothing but acephalocysts, and *tuberculization*, a name invented expressly, is the result of the destruction of these animals. The author of the present paper has chiefly studied the development of tubercles in the lungs, and employed for that purpose a microscope, magnifying nine or twelve times. When you extract with precaution one of those small granulations, of a gray colour, which abound in the lungs of certain individuals, and are the origin of tubercles, and place it under the focus of the microscope, having lacerated it, you see that it is composed of other granulations still smaller; and the lacerated substance seems to be composed of an innumerable number of small albuminous globules, connected to another by hyaline filaments, and the whole enveloped by a layer of mucus. Granulations, therefore, appear to be constituted by a filamentous apparatus, surrounded by globules in great number. The analogy is clear and striking between this structure and that of the mould which forms on paste, bread, &c.

This analogy, without doubt, does not amount to a demonstration; however, the ideas of the author (says M. Breschet) deserve peculiar attention; they point out the way to a new theory, and to the probable existence of a new class of beings which has not hitherto been suspected. When we examine the granulations with

care, we find a great number which become opaque in different points; others are already half opaque; finally, some have become perfectly opaque in their whole extent.

These observations afford a strong argument against individuals who regard the granulations as totally foreign to the production of tubercles. Tuberculization commences in the centre of the granulation, and extends from the centre to the circumference. It is effected by the absorption of the mucus surrounding the granulation, which is converted into a substance composed simply of the globules and hyaline filaments. The tuberculization goes on more readily in certain individuals than in others, and may go on to such a degree as to obstruct the lungs altogether, and produce death before the tubercles are perfectly formed. M. Kuhn has also examined, with the microscope, the expectorations of phthisical individuals. When the globules which float in the more liquid matter were separated, he found them equally composed of hyaline filaments, and of small viscid globes surrounded with mucus; thus there is a striking resemblance between the globules found in the spittle, and the gray granulations disseminated through the lungs.

From these several facts the author concludes:—1st. That pulmonary granulations are composed of globules and hyaline filaments, clothed with mucus. 2nd. That they are analogous to parasitical animals found in other substances. 3rd. That they may be converted into tubercles, although this change is not always necessary. 4th. That tuberculization is effected by the absorption of the mucus, and finally, that we find the elements of these granulations in the expectorated matter.

The commission proposed to insert the memoir in the fasciculi of the academy.

RE-VACCINATION.

THE question of revaccination continues still to occupy much of the attention of physicians of France, not only in the capital, but in all the provincial towns of note. The Academy of Medicine has appointed a committee to examine all the doubtful points connected with the subject, before giving any decided judgment, and, from time to time, various communications are addressed to that body from practitioners residing in the provinces. Amongst the latter M. Lurott, a physician residing at Bischwiller, has made several experiments, the results of which possess interest. Within a period of four years this physician