no constriction, but as soon as the membranes were ruptured it was grasped by a firm ring closing upon it. This ring relaxed during the interval, but returned with the next pain. This could not possibly have been the undilated os, and was, he most certainly believes, the contraction ring, since the variation of contraction and relaxation could not be explained in any other way.

Treatment.—Budin, regarding the stricture as the chief cause of dystocia, advises its mechanical dilatation, but Veit, on the other hand, considering it only a part of a general tetanic condition, believes that patience and narcotics will suffice. There are cases, however, in which we cannot wait, and in these the fingers and hand are the best dilators.

I think that the facts which I have now brought before you are sufficient to prove the importance to the practitioner of a careful study of the lower segment of the uterus and the contraction ring; and, if I have impressed you with a serious view of the dangers resulting from ignoring them, my task has been accomplished.

ART. XVII.—On "Fourth Disease" (with description of cases).^a By JOHN J. WEAVER, M.R.C.S., L.S.A., D.P.H. Camb.; Medical Officer of Health, Southport; Medical Superintendent of Borough Infectious Diseases Hospital.

ON July 14th, 1900, there appeared in the *Lancet* a communication from Dr. Clement Dukes, of Rugby, entitled "On the Confusion of two Different Diseases under the name of Rubella (Rose Rash)." My attention was particularly drawn to this communication by the fact that, for some months after I took charge of the Borough Infectious Diseases Hospital, in the early months of last year, I was puzzled by noticing that many of the scarlet fever cases treated there appeared to be having relapses—viz., a recurrence of the rash and rise of temperature, such as usually characterise the commencement only of the disease. For instance, as shown in Case I., a case of

^a Paper read before the Southport Medical Society, April 10th, 1901.

scarlet fever would apparently be, for a time, following the usual course of the disease, and be recovering, when, all of a sudden, the typical rash of scarlet fever and rise of temperature would reappear, and the disease apparently recommence. After an experience of about six such cases in about half as many months, among an average of about 20 cases of scarlet fever in the hospital at any one time, I gave a good deal of attention to the matter, especially also as the experience was altogether new to me, and, as far as I could judge by reading, was most unusual, if not unknown to others.

In the communication referred to above Dr. Clement Dukes points out that there is an infectious disease which, provisionally, he calls "Fourth Disease" (because it is an additional disease to the other *three* diseases, scarlet fever, measles, and German measles), closely resembling scarlet fever, and very apt to be mistaken for scarlet fever.

We shall, I think, be all agreed as to the nature and characteristics of the ordinary types of scarlet fever, measles, and German measles, though, perhaps, a word on each of these diseases may help to clear the ground for what follows.

Scarlet fever is a distinct disease, the rash of which is, I think, well described by Osler as consisting of "red spots on a deep subcuticular flush," and first appearing on neck and chest.

Measles, or morbilli, or, as it is sometimes called, rubeola, is also a distinct disease, but as it is not likely to be confused with the so-called "Fourth Disease," it may be dismissed without any further remark.

German measles, otherwise known as rubeola notha, Rötheln, rubella, epidemic roseola, or rose rash, is in many respects like "Fourth Disease," and, therefore, requires rather more careful consideration. Probably many of you will, I think, be of opinion that this so-called "Fourth Disease" is nothing more than the scarlatina form of German measles, and this, it seems, had been the opinion of Dr. Clement Dukes himself up to recently, until, in fact, in 1900, he had to deal with an epidemic at Rugby of "Fourth Disease," in which 42 per cent. of the cases

had already had, comparatively recently, German measles. Dr. Clement Dukes' contention now is that the disease formerly known as the scarlatina form of German measles is a distinct disease of itself, called by him "Fourth Disease," and that it does not protect a patient from an attack of German measles; nor, *vice versâ*, does an attack of German measles protect a patient from an attack of "Fourth Disease." It is, therefore, necessary now to point out in what way this so-called "Fourth Disease" differs from German measles or rubella.

The principal point of distinction, in my opinion, is the character of the rash in each disease. In German measles all authorities seem agreed that at some stage of its course the rash is more or less "patchy" (like measles). This "patchy" character of the rash in German measles being, in my opinion, a very important point in the diagnosis of German measles as against "Fourth Disease," I particularly draw your attention to it. Osler, writing of German measles, states that "the *patches* are less distinctly crescentic than in measles." Liveing ("Handbook of Skin Diseases") describes the rash of German measles as follows:—"At first, *patches* like measles, subsequently often becoming diffuse like scarlatina." Frederick Taylor ("Practice of Medicine") states that the rash consists of "pink spots, round or oval, very slightly raised above the surface, uniformly scattered, and generally discrete, though sometimes very closely set." Goodall and Washbourne ("Manual of Infectious Diseases")—"The rash starts as small, very slightly raised papules, similar to those of measles. . . . The papules often enlarge and coalesce, so as to produce a uniform erythema." Goodhart ("Diseases of Children, 1894") says "the eruption, though usually raised in coalescing points like measles, is occasionally diffused, and, unquestionably, more like scarlatina," and he adds, "and this practically has suggested to some that Rötheln is a term applied to two distinct exanthems."

By the above quotations I wish to show that, according to these authorities, the rash of German measles is always, at some stage or other, more or less patchy, and, therefore,

unlike the even, uniform non-patchy rash of scarlet fever. Now, in the cases I describe below as cases of "Fourth Disease," the rash, in my opinion, could in no case be called a "patchy" rash. It was of a uniform, finely punctate character, indistinguishable from the ordinary early rash of scarlet fever. In fact, I admit candidly that I have mistaken the rash of what ultimately proved to be "Fourth Disease" for the rash of scarlet fever, and that even now I am unable to distinguish the rashes by themselves, the one from the other. That I am not alone in this difficulty is shown by the fact that several of the cases I am describing have been sent into the Borough Hospital as cases of scarlet fever by various medical men in the town, and have been shown there by subsequent events not really to have been cases of scarlet fever at all.

I have recently also had further indication of some confusion in the medical mind locally on this point, from the fact that on one or two occasions I have been notified of a case of scarlet fever commencing in a house, and in two or three weeks afterwards, without removal of the patient, have received an intimation that the house was ready to be disinfected. In these cases evidently there had been some mistake in diagnosis.

Let me now briefly state the distinguishing points about this so-called "Fourth Disease." In the first place, the rash, as stated above, is indistinguishable in character from that of scarlet fever. In all my cases, however, unlike scarlet fever, it appeared first on the face—generally round about the mouth. In the next place, even when the rash is extensive—for instance, all over the front and back of body and limbs—the temperature is not high, not above about 100° usually, and the pulse is not accelerated, as one would expect to find in scarlet fever. In fact, "Fourth Disease" is to be distinguished, as far as my present experience goes, by the fact that in spite of an extensive and well-marked scarlatina rash, you have little or no rise of temperature or pulse, the throat symptoms are slight or absent, there is little or no feeling of illness, and no loss of appetite (patient eats, or wishes to eat, his food as usual).

In addition to the above points of distinction, Dr. Clement

Dukes lays a good deal of stress—in distinguishing "Fourth Disease" from scarlet fever—on the tongue, which in scarlet fever peels on the fourth day, but in "Fourth Disease" does not. I am not prepared to say anything at present on this point, as I regret to say that in the past I have not made sufficiently close observations of the tongue, in the mild cases of scarlet fever, to enable me to form any definite opinion as to whether the tongue of "Fourth Disease" differs from it or not.

In all other respects "Fourth Disease" is very like German measles—the eruption is usually the first symptom in both diseases, the incubation period is about from 9 to 21 days, and the throat and eye symptoms are much the same.

In none of the cases here recorded as "Fourth Disease" was there any sneezing, coryza, or cough.

The enlargement of the lymphatic glands—particularly of the posterior cervical glands—which is said to be pretty general in German measles, does not appear to be so general in "Fourth Disease." In none of the cases recorded in this paper was any enlargement noticed, nor was any complaint made of them by any of the patients.

There are said to be no sequelæ after "Fourth Disease," or German measles. None appeared in any of the cases here described.

Although, according to Dr. Clement Dukes, cases of "Fourth Disease" may be occasionally followed by free desquamation, practically no desquamation took place in any of these cases (unless the first case, marked as a "doubtful case," was a case of "Fourth Disease" in the first place, and scarlet fever afterwards). In one case—the second of the cases here recorded, that of Richard T.—though the rash was very profuse there was only a suspicion of peeling at the flexures of the fingers, between the first and second metacarpal bones; so slight, however, that it was difficult to be positive about it.

Sir Wm. Broadbent (in the *Lancet*, July 28th, 1900) states that he "accepts without hesitation the differentiation of rubella into two distinct diseases which Dr. Clement Dukes has made."

CASES.

CASE I.—A doubtful case, one of the series of cases, however, which first drew my attention to the possibility of there being a so-called "Fourth Disease."—Arthur B., aged seventeen years, admitted as scarlet fever, May 5th. Notes by the nurse at hospital:—Vomiting and sore throat on 2nd, faint rash on 5th (date of admission), tongue strawberry, throat congested, tonsils enlarged. No complications followed. Desquamated freely on hands and feet. On June 29th patient was again seized with vomiting, headache, and sore throat, with faint rash on chest. On 30th, was covered with profuse rash. Tongue typical (of scarlet fever), throat congested, with patch on right tonsil. Eyes injected. Temperature 105°. Desquamated freely. Discharged September 7th.

CASE II.—Case admitted as scarlet fever; probably really "Fourth Disease," and the cause of four of the subsequent cases of "Fourth Disease."—Richard T., aged seventeen years, admitted on October 23rd, with profuse, well-marked scarlet fever-like rash. Notes by nurse:—Throat slightly reddened, tongue not typical, slightly furred; eyes normal; very slight desquamation (?) followed; no complications.

On November 5th—*i.e.*, thirteen days after above case was admitted into hospital—three children of the same family developed at home similar rashes, and a fourth child developed the rash on the following day. As there was some doubt about the nature of the complaint, I was asked to see the children. Up to that time I had no doubt in my own mind about the member of this family who was in the hospital, with slight peeling already beginning to show as I thought, having scarlet fever. On finding also each of the four children at home with a fine bright rash, like scarlet fever, and two of them with well-marked enlarged submaxillary glands, I came to the definite conclusion that all these cases were scarlet fever. Dr. Sykes and Dr. Pinkerton (of this town) also saw these children, and apparently could not make up their minds that they were cases of scarlet fever, though unable to say what the complaint was. Besides, Dr. Sykes, who attended the children, informed me afterwards that in all the cases but one the temperature was normal all through, and in the exceptional

case it only reached 100° just before the rash came fully out, and fell to normal soon after.

On account of the father of these children being a milk seller, the children were sent away to a relative for isolation, and after staying away for 12 days (November 7th to 19th) all returned home. No desquamation had appeared in any of the cases, and no complications followed their early return home.

This history threw a doubt in my mind on the diagnosis of scarlet fever in the case of these cases, and of their brother, Richard T., in the hospital, and subsequent events, as shown in the account of the four following cases, seemed to me to confirm this doubt.

Four cases of scarlet fever, followed by "*Fourth Disease*":—

CASE III.—(1) Harry F., aged eight years, admitted as scarlet fever on September 11th; disease ran a normal course, and patient was quite convalescent when a rash of "*Fourth Disease*" appeared on November 11th (19 days after commencement of exposure to infection from Richard T.). Rash, small scattered red spots appearing first on face, then spreading over body and limbs, and gradually declining; had disappeared on fourth day. Throat slightly relaxed, tongue furred, eyes injected and watery. Maximum temperature, 99°; pulse, 116. Desquamation very slight. Discharged November 24th.

CASE IV.—(2) Sydney C., aged seven years, admitted as scarlet fever on September 27th, and was convalescent from scarlet fever when on November 12th (20 days after commencement of exposure to infection) second rash appeared, commencing on face, then spreading over body and limbs. Throat normal, tongue furred, eyes slightly injected. Temperature, 100°; pulse, 120. Slight desquamation on face. Discharged December 3rd.

CASE V.—(3) George P., aged four years, admitted September 17th as scarlet fever, with bright red rash, nasal discharge, glands on both sides of neck enlarged. Desquamation on hands, September 30th. Second rash appeared on November 15th, on face first, and fading in one day. Eyes slightly injected, throat normal, tongue clean. Temperature sub-normal. No desquamation. Discharged November 27th.

CASE VI.—(4) Joseph P., aged five years, admitted as scarlet

fever September 4th, and had become convalescent. Second rash on November 30th, on face first, and spreading over body slightly, disappeared in two days. Throat normal, tongue clean, eyes very slightly injected. Temperature sub-normal. No desquamation. Discharged December 4th.

Three cases of "Fourth Disease," followed by scarlet fever:—

CASE VII.—(1) Jane D., aged six years, sent into hospital, September 29th, as scarlet fever, with well-marked scarlatina-like rash. Temperature, 99.8° . No desquamation followed. On October 23rd developed typical scarlet fever; well-marked rash on front of chest and back; strawberry tongue, headache, throat congested. Temperature, 103.6° ; pulse, 156. November 5th, albumen in urine; November 7th, blood in urine. Fine powdery desquamation followed. Discharged January 22nd, 1901.

CASE VIII.—(2) Leonora S., aged five years, sent into hospital, October 23rd, as scarlet fever, probably "Fourth Disease." Developed scarlet fever on October 26th, 6 days after admission.

CASE IX.—(3) Dorothy S., baby, sister to above, sent into hospital, November 8th (16 days after admission of her sister), as case of scarlet fever. Temperature on admission, 99.6° ; pulse, 140. On November 13th (5 days after admission) developed scarlet fever. Temperature, 102.4° ; pulse, 160.

With the differentiation of these cases into scarlet fever and "Fourth Disease," or *vice versa*, there has been an entire disappearance in the hospital of cases of what appeared to be relapses or secondary attacks of scarlet fever.

The practical importance of distinguishing these diseases, and the danger of the admission of cases of "Fourth Disease" into hospital with cases of scarlet fever, will be admitted. Besides, "Fourth Disease" is a simple, non-dangerous complaint, with an infectious period lasting about 14 to 21 days, and therefore not requiring the long isolation of scarlet fever.

For practical purposes I shall be well content if I have established in your minds the fact that there is a disease very like scarlet fever, yet *not* scarlet fever, whether you call it "Fourth Disease" or the scarlatina form of German measles.

Since writing the above I have been informed by Dr. Chaster (of this town), who has frequently taken charge temporarily of the hospital, and the statement is confirmed by the matron of the hospital, that my predecessor, the late Dr. Vernon, who had had a very large experience of infectious diseases, was at times much worried by the apparent recurrent attacks of scarlet fever occurring in the hospital.

ART. XVIII.—*The Climate of the Canary Islands.* By S. FRANCES LATIMER, Author of "The English in the Canary Isles," "A Life Laid Bare," &c., &c.

NOW that the "Nordrach" system has taken hold of the public mind as an acceptable and feasible method of cure for the sadly-prevalent disease of phthisis, I would, as a traveller, justified by personal knowledge of the locality, draw attention to a spot where one of the salient points of the treatment, viz., living in the open air, is alike attainable and agreeable.

I speak of the Canary Isles.

In 1887 I paid a first visit to Teneriffe and Grand Canary, when beyond the varied attractions and pleasurable associations connected with that visit, I bore away a lasting happy impression of the equable, delightful climate.

In the summer of 1899 I renewed my acquaintance with Teneriffe and Grand Canary, mainly to ascertain the truth of the assertion made by residents, that the variations of temperature which mark the seasons and prevail in other portions of the globe are far slighter in these favoured isles.

Accustomed to the vigorous push of English enterprise, in some respects the islands had not realised the progress I had anticipated when quitting their shores. The Spanish Government is proverbially slow; also Spanish payment is rarely adequate to secure trusty and energetic furtherance of such plans as may be devised. While this is a disadvantage to the islands, it is an advantage to consumptive patients, since it leaves these pre-eminent health resorts less exploited and more tranquil.

Doubtless had the islands passed into the hands of the