The significance, then, of slight trauma to joints is its bearing on prognosis. The possibility of such joint changes following trauma must always be borne in mind and a guarded prognosis must be made in many joint injuries, especially those occurring in individuals past 40 years of age and of arteriosclerotic or gouty habit.

From a medicolegal standpoint these chronic joint changes are of much interest. Not infrequently claims for damages or accident insurance are made on the basis of joint changes, developing months or years after the original injury to the joint. Since such joint changes may undoubtedly be initiated by a slight traumatism to the joint, it would seem that such patients have just claim for damages, although in any given case it may be difficult to prove that the original trauma stood in direct causal relation to the subsequent joint trouble.

I have recently seen two such cases, one a hypertrophic arthritis of the wrist resulting supposedly from a fall on the hand two years previously, and the other an elbow which could not be completely extended because of a bony mass between the head of the radius and the articular surface of the humerus, resulting supposedly from a slight trauma some time previous. Both patients were in litigation to recover damages for the injury, but both lost in court.

There is another type of joint trouble which follows slight trauma, in which conditions are reversed. In this type of case the joint changes precede the trauma, but the symptoms are latent until called into being by the trauma.

It has been frequently observed that the changes of true arthritis deformans may be present in one or more joints without giving rise to any symptoms in these joints. The symptoms may, however, be lighted up at any time by some trauma to the joint. In the routine examinations at the Cincinnati Hospital this observation has been repeatedly verified. In the examination of joints of patients referred to the Roentgen laboratory for a supposedly acute traumatic synovitis due to falls many of these joints show all the changes of an advanced arthritis deformans, and yet such a patient will give no history of trouble with the joint previous to the injury. This observation has been made most frequently on the knee joint. An x-ray examination of the uninjured (supposedly normal) knee will show practically the same changes, although the joint functions perfect and painlessly. When the symptoms are once lighted up in these joints by the trauma they rarely disappear completely but run the characteristic course of arthritis deformans, namely, with remissions and exacerbations. The possibility of an underlying arthritis deformans should always be borne in mind when a traumatic joint inflammation refuses to subside under the usual treatment.

The following case illustrates the medicolegal phase of this circumstance:

Patient.—Mr. K. (referred for x-ray examination by Dr. Maloney), aged about 55, suffered a severe strain to his left knee in a railroad accident. The immediate symptoms were so slight that the patient continued on his feet and at his occupation of railroad conductor. In about ten days he took to his bed and was confined there several weeks, apparently because of delayed shock. When he got up again he complained of some weakness in the left knee and some pain. This pain and weakness was especially marked when the knee was fatigued and the symptoms became progressively worse during several months, after which I was asked to make an x-ray examination.

Examination.—At the time of examination the knee was slightly swollen and slightly tender over the internal aspect,

but complete flexion and extension were not painful or restricted. The x-ray examination revealed no fracture or other gross injury to the joint, but the characteristic changes of arthritis deformans were present; bony irregularities, spicules, lipping of articular edges and loose bodies were seen. The uninjured (supposedly normal) knee was then skiagraphed and the same changes were noted.

Here then was a case of well-advanced arthritis deformans but symptomless up to the time of the trauma. The patient made a claim for accident insurance, which was allowed and undoubtedly justly. For, although the chronic joint changes preceded the injury, the injury lighted up the symptoms which now refused to subside. In the absence of such an injury it is reasonable to suppose that the patient would have continued to enjoy the full use of his knee for years perhaps. For the uninjured knee was evidence to this possibility. Hence the patient had a just claim for damages or insurance, although the pre-existence of the chronic joint changes should have modified somewhat the amount of the claim.

22 West Seventh Street.

THE REGISTRATION OF VITAL STATISTICS.*

CRESSY L. WILBUR, M.D.

Chief Statistician, Bureau of the Census,
WASHINGTON, D. C.

I feel that I may reasonably take for granted the validity of the principle that complete and trustworthy vital statistics are the very foundation of sanitary work and absolutely indispensable in the daily duties of officers of the public health.

The means of obtaining such statistics were laid down in the "essential requirements" formulated some years ago by the American Public Health Association and the Bureau of the Census, and only last month reaffirmed, as "statistical rules," by the American Public Health Association. These principles have formed the basis of many successful laws, and no legislation in this country that has disregarded them has been successful. They are so important that it is worth while to repeat them:

ESSENTIAL REQUIREMENTS FOR REGISTRATION OF DEATHS.

1. Deaths must be recorded immediately after their occurrence.
2. Certificates of death of standard form should be used.
3. Burial or removal permits are essential to the enforcement of the law.
4. Efficient local registrars are necessary.
5. The responsibility for reporting deaths to the local registrar should be placed on the undertaker or other person having charge of the disposition of the body.
6. The central registration office should have full control of the local machinery, and its rules should have the effect of law.
7. The transmission and preservation of returns should be provided for.
8. Penalties should be provided and enforced.

ESSENTIAL REQUIREMENTS FOR REGISTRATION OF BIRTHS.

1. Births must be recorded immediately after their occurrence.
2. Certificates of birth of standard form should be required.
3. Some check is necessary to secure enforcement of the law.
4. Efficient local registrars are necessary.
5. The responsibility for reporting births to the local registrar should be placed upon the attending physician or midwife, and upon the parents if no physician or midwife was in attendance.

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6. The central registration office should have full control of the local machinery, and its rules should have the effect of law.

7. The transmission and preservation of returns should be provided for.

8. Penalties should be provided and enforced.

Those who have had to do with public health work are aware how inadequately deaths and the causes of deaths are still registered in the United States. Not quite one-half of the population of the country is yet included in the "registration area," which relates to deaths alone. Not a single state has yet qualified as having approximately complete (90 per cent.) registration of births.

It is, of course, well known that earnest efforts are being made to extend effective registration of vital statistics; that improved laws have been recently passed in many states; and that the great American Medical Association, the American Public Health Association, the Conference of Commissioners on Uniform State Laws, and the Bureau of the Census, have joined in the preparation of a model bill, which will be presented in several states next winter for legislative action through the aid of the state sanitary authorities. If the work already undertaken should meet all possible success, we might have nearly or quite two-thirds of the entire population of the United States in the registration area for the next census year, 1910.

But it may not be fully realized—and to this I desire to call the special attention of sanitary and registration officials as the fighting force in the field—what are some of the chief dangers and difficulties attending the movement for the extension of the registration area, and interfering, or likely to interfere, with the passage and proper enforcement of adequate registration laws.

First, and most ominous, is the tendency to allow undertakers to act for local registrars as subregistrars of deaths and issue burial or removal "permits" to themselves. The "permit" thus issued is no longer a permit, forming the most essential item of the registration machinery and insuring that the death must be registered by a responsible official before interment. It is a mere farce, and the very statement of "issuing a permit to oneself" should show its ridiculous character. In practice it seriously interferes with the function of the local registrar, because he can not know, before the body is disposed of, that the death has been properly registered; and undertakers acting as subregistrars will frequently fail to file certificates promptly and will not exercise as much care in securing satisfactory certificates as a well-qualified local registrar should. In such cases the latter can not prevent this by refusing a permit until a legal certificate of death has been filed.

Every facility, to be sure, should be afforded undertakers in complying with the necessary requirements of an effective registration law, and for this purpose the requisite number of local registrars conveniently located is very important, and also the plan of utilizing the nearest registrar as in the Ontario law. Yet the occasional complaints of "hardship," few of which are well-founded, should not be made an excuse for turning a registration system over to the undertakers neck and crop and expecting them to enforce it against their personal convenience. For it is undoubtedly easier and simpler to inter the body of a dead human being without taking the pains to make a legal record of the death, as is done in many of our states at present—one of them only across the Potomac from the capital of the

United States—and any "red tape" in this matter, if compliance is to be secured, certainly requires a little attention on the part of somebody, and a penalty to compel such compliance. Who can better take this trouble than the man who forever removes the evidence of death and of the cause of death from the world? As a matter of fact, registration laws thoroughly enforced are a benefit to the undertaker's profession and will undoubtedly be recognized as such by all progressive funeral directors and licensed embalmers familiar with their practical operation in registration states.

The second difficulty is the ever-recurring interference of the old and thoroughly discredited county system of collecting returns. Satisfactory returns of births or deaths have never been collected through county officers (clerks, health officers, probate judges, etc.) in any state, as many times as it has been attempted to do so, and never will be, for the plan is inherently opposed to the essential requirements of registration. Yet it will take a vast deal of education to get the "county idea" out of the heads of legislators, especially in the southwestern and southern states.

The third difficulty lies in the weakness of the executive functions and financial powers of some state boards of health, to which are usually entrusted the administration of registration laws. Registration is not the showy side of sanitary work. It requires some money and it takes much time, patience, tact, and again tact, patience and time. It is not pleasant work, to many minds, for it requires much attention to details, and forever and forever the insistence that undertakers, physicians, registrars, shall understand and obey the law. And it may require backbone, when it is easy to connive at or ignore violations of the "letter" (and usually the spirit goes with the "letter") of the law, to insist that the plain requirements of the law be obeyed, or that prosecution follow. The individual who desires an exception to be made in his case may have political influence or at least have influential friends. And for all this trouble the sanitary official gets only figures for his pains, which are more or less valuable in proportion to his faithfulness to his duty to the state. He may also feel that he has helped to maintain the priceless vital records of the commonwealth. But it is not showy work, although it may demand as great persistence, ability and technical training as any or all of the other duties of the state health department.

Our state boards of health should be strengthened when weak, and they should have ample provisions for the necessary cost of registration of vital statistics—which is not excessive—when this duty is imposed on them. They should obtain the best ability possible to direct the registration work, and should support it firmly in the fearless, but uniform and equitable, enforcement of the law. If they can not obtain money for this purpose or command executive ability, they should retire from the field and seek to build up a bureau of vital statistics in some more favored department of the government. But it will usually be possible to secure the necessary means, and care should be taken that they are devoted to the fundamental requirement of better vital statistics, rather than diverted to more attractive but less essential lines of work. If vital statistics are in fact, and not as a mere theory, the foundation of sanitation, then one should insist on a good foundation before attempting much of a superstructure. This is better than to have a house all cupola, suspended in midair like Mahomet's coffin.