At an hotel near Torquay I was asked to see a slope-shouldered, ill-developed boy of 8, whose parents were very anxious about him as he had a weak chest. At first sight it almost looked as if his neck wear was sufficiently roomy, for directly you introduced your fingers it slipped up over them to where the neck was smaller, but on holding it in its working position I found it tight. On undressing the child he at once gave a full respiration of relief. I then showed the mother that the weight of the clothing had made a furrow round the root of the neck. This was at once attended to, and subsequently the parents told me they could almost see the child improve and develop from day to day, and six months later that he was perfectly well.

A Bluecoat boy of 14, but very small for his age, was sent during the holidays to run wild on the Norfolk coast, but while under these ideal conditions was found to have a weak chest, in which state he returned to town. He was ordered respiratory exercises for his ill-developed chest. On his father's side an aunt and other relations had died of phthisis, and on his mother's side he had lost an uncle of the same disease. I found his neck wear so tight that I could barely squeeze my little finger between the soft neck and the rigid clothing. Ten days later he was a different child. He then showed me that a finger wound which for nine months had refused to heal was well, his chest was well, and he has since done well in every way at school.

The lymphatics are easily obstructed by neck pressure.

A surgeon in North Wales, seeing that I had written a pamphlet on this subject, wrote to tell me he had had a hard tumour beside his trachea, which was regarded as an obstacle to life assurance. He slackened his neck things; the tumour was absorbed in four months. He then completed his insurance.

A man of 50, with malignant disease of the tongue, was suffering great pain. He had some enlarged glands behind and one in front of the left sterno-mastoid. He wore no collar, but had a flannel shirt, which appeared to compress him just above the inner end of the clavicles. I suggested he should loosen this, and before I left the house he expressed relief. In a fortnight the enlarged glands behind the muscle had entirely disappeared, the other was smaller, and all pain was pretty well gone; and though this did not seem to arrest the disease, he always said up to the last that I had given him great comfort.

A fat, clumsy girl of 15, who had had many fits, was stupid, troublesome, and gave great anxiety to her friends, had tight neck wear. This was subsequently kept loose, and four months later her mother told me she had very greatly improved.

Strange as it may seem, I have found the same treatment as beneficial in the gout and rheumatism of others as in my own case.

In January, 1911, I took in hand a retired army officer of 70, who had been a great sufferer from gout, rheumatism, lumbago, and sciatica. Six months later he said that from that time he had lost all his troubles, and had had better health than ever.

A working man, aged 73, who had for eighteen months been set fast from rheumatism in knees and hips and could only move by means of his arms, was induced by me to wear his neck things thoroughly loose. He lost most of his pain in a fortnight, and in nine months could walk about the room with a stick, and with this and a helping hand had even crossed a little street.

I have found the same thing invaluable in cardiac cases, apparently because the cause of the obstruction to the blood current has been removed. For example:

A lady fifteen months ago was approaching a critical condition from dilated weak heart of some years' standing. She had blue lips, dilated capillaries of face, shortness of breath, and great dyspepsia. I persuaded her to have her neck things thoroughly loose, and she is now in every way in enjoyment of the best of health. She is very active, and has quite lost her dyspepsia.

But these are only a few of the great variety of cases that I have dealt with successfully, and amongst them were several cases of migraine.

I find it important to protect the neck from pressure just above the inner third of the collar bone, and have had collars specially made for this purpose. In some cases it is as well not to relax the neck clothing too rapidly. As I have said above, I personally somewhat suffered at first from this. The too sudden removal of the support that appears to cause the high blood pressure is apt to produce faintness. For example:

A nurse noticed that a young child in her charge who had not been very well, went off into a stupor when undressed for bed. Thinking it a fit, she put the child into a hot bath. The child not coming round quickly, a doctor who was sent for said it was not an ordinary fit, and confessed himself puzzled. Exactly the same thing happened next day. A friend of mine who happened to be a relative of the family, and who had perused my pamphlet, suggested that the child having been too tightly neck-bound during the day, when the blood pressure became raised, had fainted by reaction on its removal. The child, subsequently more sensibly dressed, at once recovered, and had no more stupors.

Some of my friends have suggested that mischief may occur through pressure on the vasomotor or sympathetic nerves. Two of my friends who have had extensive medical experience among Eastern people tell me they have remarked that gout and consumption are almost unknown among those who have no neck covering at all. I have found that people of both sexes whom I have advised to have their things perfectly loose have given the best results. I see that many foreign surgeons and physicians are finding this out. Stimulants and hot weather dilate the capillaries of the head and neck, so that the neck wear may under these circumstances exert a pressure that it would not otherwise do. I am also convinced that too close wrapping up of the neck against cold is wrong. Quite as much warmth is got from a loose muffler as from a tight one.

What I am suggesting is always recommended to be used in first aid in any emergency, and is therefore surely useful to prevent an emergency. One must expect an occasional failure, but I only know of three.

One was an epileptic girl of 15. Though from the moment the loose neck plan was tried she ceased to have fits for six months and seemed wonderfully well, yet I heard that they returned later, after she and her friends had left my neighbourhood.

Two were men with rheumatic arthritis. Both improved much for a time, but as they were convinced they would "take cold" they soon returned to their old way. But as a fact these people seem less liable to take cold than others.

Though I have met with many exceptions, ladies are as a rule difficult to deal with, unless they are suffering severely, and even then it seems that some would rather suffer anything than not look smart. However, when they do for any reason adopt my plans I have found their personal appearance is immensely improved, as good health means good looks. Besides, I have found that when they have allowed Nature to have her way and take what neck-room she wants, they not only get good looks but may even regain their smartness.

TINCTURE OF DIGITALIS: ITS POTENCY AND KEEPING PROPERTIES.*

BY

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IN spite of numerous papers pointing out the great variability in the potency of different samples of tincture of digitalis, it is yet often prescribed without any safeguard but the limit of the pharmacopoeial dose. This is hardly a safe proceeding. Not only is the initial variability in potency very great, but the drug deteriorates on keeping. Consistent results can, therefore, be obtained only from samples of the drug which have been standardized at a recent date. Up to the present none of the alleged active principles of digitalis appear to have found much favour. Dixon¹ concludes a comprehensive review of the subject as follows: "Pharmacological and clinical investigations have not made a clear case for the substitution of 'active principles' for galenical preparations of digitalis in the treatment of patients. Those active principles are for the most part just as irritant as the infusion or tincture. They are neither more reliable and constant in action than a properly standardized tincture, nor are they absorbed more rapidly. They have the same tendency to accumulate and are much more expensive. The one advantage that certain of them possess over the pharmacopoeial preparations is that they may be given intravenously without ill effect."

Fortunately, the demand for standardized digitalis is now sufficient to have created a supply, and several firms of manufacturing chemists submit samples of their products to pharmacological tests before placing them on the market. I have been engaged in the physiological testing of galenicals for several years, and have accumulated a number of data regarding the potency of the tincture of digitalis.

*The expenses of the research on the keeping properties were defrayed by a grant from the Carnegie Trust.

Initial Potency.

During the three years ending December, 1911, I examined 23 samples of tincture of digitalis, freshly made by chemists of repute. The standard employed was that 3 minims of the tincture should kill a frog weighing 20 grams within four hours.

Only male frogs were used, as the weight of ova may vitiate results. Of the 23 samples 12 were of average potency, 6 were under the average and 5 were over the average strength. The actual strength of each may be indicated by stating the dose equivalent to the maximum pharmacopoeial dose of 15 minims.

Average potency	12
Under average	6-25 : 22½ : 22½ : 20 : 18 minims.
Over average	5-10 : 9 : 8 : 7½ : 4 minims.
Total	23

Since these varying results are obtained by manufacturers who are anxious to produce drugs of standard potency it would be of interest to know what kind of tincture is made by firms who aim at nothing more than keeping within the letter of the law as laid down in the *Pharmacopoeia*. It is to be noted that, in the case of tincture freshly made by firms of repute, the greater danger is likely to arise from the drug being too strong.

Keeping Properties.

Many estimates of the keeping properties of digitalis have been made. In most of these the initial criterion of potency has been care in manufacture or the reputation of the manufacturer. As already pointed out, this may not be a satisfactory test, and the value of the present results lies in the fact that the samples were all tested when fresh. Moran² found that a tincture made by a reliable firm of chemists from carefully dried leaves of good quality should retain its activity for two or three years. Haynes found that tincture of digitalis would keep for two years without material change in activity. His samples were kept in the dark. Other observers have found deterioration in two years' time, others in one year, and yet others in nine months.

The conditions under which my specimens have been kept were by no means specially favourable. They were not protected from light, and while the room in which they were stored was heated during the daytime for part of the year, they were subject to the variations of temperature of the Edinburgh climate during academic vacations.

The results may be summarized as follows:

1. Of three samples about a year old (14, 13, and 12 months) all were found to have retained their full activity.
2. Of four samples about 18 months old (20, 19, 18, and 18 months) one was found to have retained its activity, two were under strength to an extent not exceeding 33 per cent., and one was under strength to an extent exceeding 33 per cent. and not over 66 per cent.
3. Of three samples about 2 years old (22, 23, and 24 months) two were under strength to an extent not exceeding 33 per cent., and one was under strength to an extent exceeding 33 per cent. and not over 66 per cent.
4. One sample 2½ years old was found to have retained full activity.
5. Of three samples about 3 years old (37, 37, and 36 months) one was under strength to an extent not exceeding 33 per cent., one to an extent between 33 and 66 per cent., and one to an extent between 66 and 100 per cent.

In view of these results, which in a general way are concordant with those of others, it is hardly necessary to point out the necessity of prescribing only those tinctures of digitalis which have been standardized by physiological methods and are not over 12 months old.

Summary.

1. Nearly 50 per cent. of samples of digitalis made by manufacturing chemists of repute showed a departure from the average standard of potency.
2. The limits of this variation were from 275 per cent. over strength to 40 per cent. under strength. In other words, the effect of a dose of 10 minims might be that of 37½ minims or of 6 minims.
3. Tincture of digitalis probably retains its full activity

for one year, but after that period deterioration of its potency to an important extent is likely to take place.

REFERENCES.

- ¹ *Quart. Journ. of Med.*, V., 1912, p. 297. ² *Med. Chron.*, October, 1911.

LATERAL CURVATURE OF THE SPINE (SCOLIOSIS).

ANALYSIS OF TWO THOUSAND CONSECUTIVE CASES.

BY

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THE following analysis of 2,000 consecutive cases of lateral curvature of the spine (scoliosis) has been compiled from the notes of cases treated in private practice from July 1885, to June 1899, by the writer's father, Mr. Bernard Roth. The first series of 1,000 cases was published in the latter's book;¹ the second series of 1,000 was published by the writer in a paper read before the Annual Meeting of the British Medical Association at Birmingham in July 1911, which paper subsequently appeared in the *BRITISH MEDICAL JOURNAL*.² With the exception of reference made to them in a paper in the *London Hospital Gazette*,³ the 2,000 cases are now published together for the first time.

1. SEX.—There were 1,721 females and 279 males—that is, females were affected six times more frequently than males.

2. AGE.—The age is taken from the time when the deformity was first noticed.

1 to 5 years old	...	...	84 cases.
6 to 10 years old	...	...	464 "
11 to 15 years old	...	...	973 "
16 to 20 years old	...	...	343 "
21 to 30 years old	...	...	105 "
31 to 40 years old	...	...	26 "
41 or more years old	...	...	5 "

Thus in 89 per cent. the deformity was first noticed between the ages of 6 and 20, and in 72 per cent. between the ages of 6 and 15.

3. HEREDITY.—573 cases, or 28.5 per cent., had blood relations also suffering from scoliosis. Particulars were obtained of 93 families in whom 3 or more members were affected; in 23 of these, 4 or more members were affected.

4. DEFORMITY (*Variety*).—Viewing the spine from behind, six varieties of deformity were met with:

Variety.—Description,	Name.	No. of Cases.	Per-centage.
1. Whole spine convex to left	Ordinary C	1,085	54.0
2. (Upper (dorsal) curve to right) (Lower (lumbar) curve to left)	Reversed S	618	31.0
3. (Upper (dorsal) curve to left) (Lower (lumbar) curve to right)	Ordinary S	123	6.0
4. Whole spine convex to right	Reversed C	122	6.0
5. (Upper (dorsal) curve to left) (Middle (dorsal) curve to right) (Lower (lumbar) curve to left)	Ordinary Ipsilon	48	2.4
6. (Upper (dorsal) curve to right) (Middle (dorsal) curve to left) (Lower (lumbar) curve to right)	Reversed Ipsilon	4	0.2

In the "reversed S" and "ordinary S" varieties the upper curve with but few exceptions was confined to the dorsal region, and the lower curve to the lumbar region.

Similarly, in the "ordinary Ipsilon" and "reversed Ipsilon" varieties, the two upper curves with but few exceptions were confined to the dorsal region, and the lower curve to the lumbar region.

5. DEFORMITY (*Degree*).—The cases were also divided into two groups, the "postural" and the "osseous." The cases with "osseous" deformity were divided into four subgroups, according as the deformity was "a trace," "moderate," "severe," or "extreme."