

tion or range of temperature. In this case, for instance, it is 13.5° F. for January. The highest or maximum temperature is the highest reached upon any day of the given month in any year of the period; for example, 71° F. was the highest temperature in any day of any January of the period. The lowest or minimum is the lowest reached on any day—*e.g.*, 6° F. in this case. These extremes, as Dr. Richards remarks, represent the "chances" the invalid has got to take in any resort; they do not indicate what temperature he may expect, but what it may be his good or evil fortune to encounter.

The other terms used in the table are self-explanatory.  
*Edward O. Otis.*

**BAMBOO BRIER.**—Under this name the tuberous roots of *Smilax Pseudo-China* L. (fam. *Liliaceae*) are quite extensively used in the Southern States as a substitute for sarsaparilla, their near relative.  
*H. H. Rusby.*

**BANDAGING.**—Bandages are used for the following purposes: to apply firm pressure, to secure splints or dressings, to afford support, or to correct deformity. They are made of almost any fibrous material, as gauze,

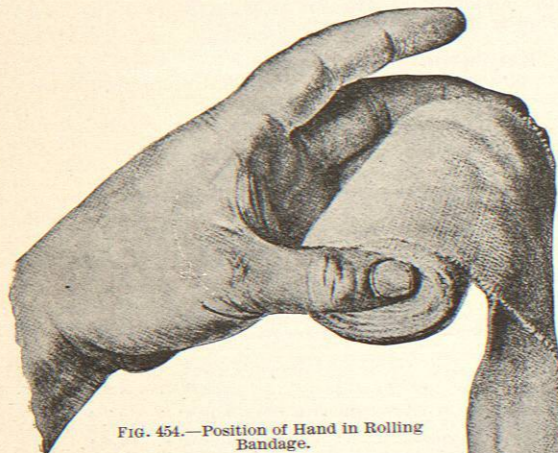


FIG. 454.—Position of Hand in Rolling Bandage.

flannel, unbleached muslin, or cheesecloth; but whatever the material, it must be both strong and supple. The most commonly used bandage is the "roller" bandage; and it is to this kind that the following remarks are applied. This is of various lengths and widths, according to the parts to which it is to be applied. Thus, for digits the roller should be three-quarters of an inch wide, and two or three yards long; for upper limb and head, two to two and a half inches wide and about six yards long; for lower limb, two and a half to three inches wide and about eight or nine yards long; for the trunk, four to six inches wide and about ten yards long. The material must be torn into strips and have neither selvage nor seams.

To make a "roller," turn about six or eight inches of bandage upon itself, and then roll this upon itself till it is a hard and firm cylinder; this forms a centre around which as much more material as is necessary can be rolled. This rolling is accomplished by holding the two poles of the cylinder

between the thumb and fingers of the left hand, while the unrolled part passes between the thumb and index finger of the right hand. The left hand is alter-

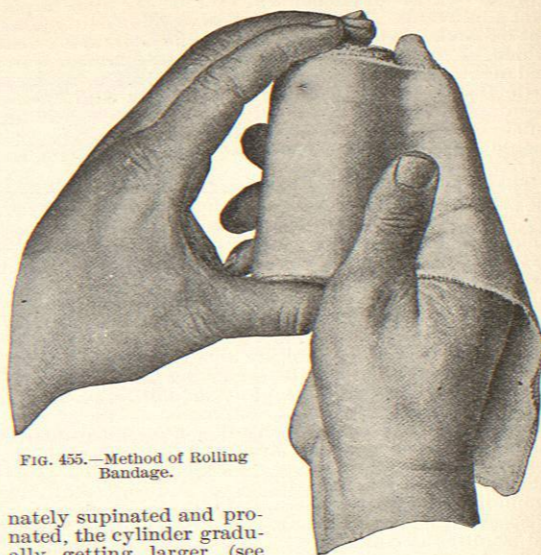


FIG. 455.—Method of Rolling Bandage.

nately supinated and pronated, the cylinder gradually getting larger (see Figs. 454 and 455). The centre cannot be displaced from a properly rolled bandage. Bandages were formerly rolled by hand, but this wearying and tedious method is now replaced by some simple form of machinery.

Bandaging cannot be learned from a book, but a few general rules may prove of service.

The surgeon should face the patient and not stand at the side of the limb. The limb should be placed in the position it is to occupy when it is bandaged. The external surface of the roller is to be applied to the part; it should pass from the inner side, over the front, to the outer side, and from below upward. If the left limb is to be bandaged the surgeon should use his right hand, and *vice versa*; hence the ambidextrous man has the advantage. Use a narrower bandage in preference to a wider

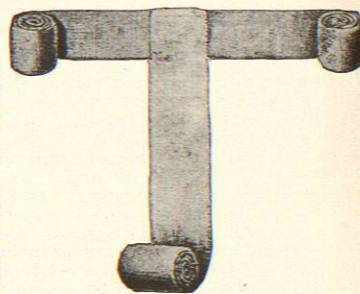


FIG. 456.—T Bandage.

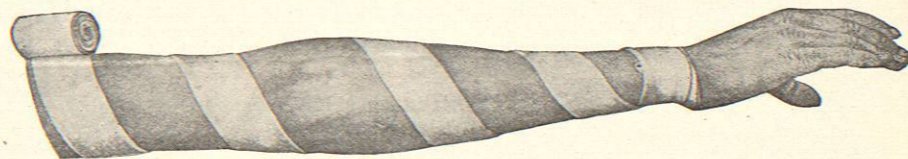


FIG. 457.—Oblique Bandage.

one, except in bandaging the trunk. Bind firmly, evenly, and tightly, but not too tightly.

Bandages have been named from their use (as suspen-

sory of breast), application (as spiral, circular), shape (as figure-of-eight), originator (as Barton, Gibson, etc.).

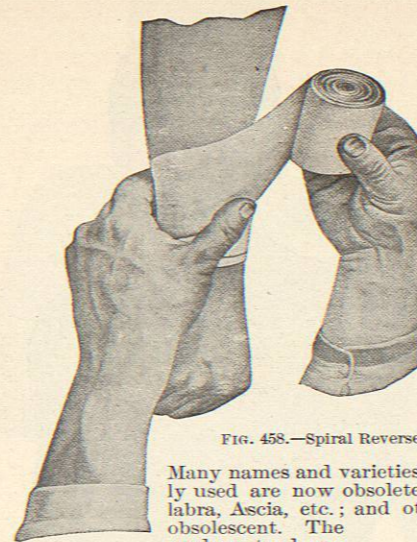


FIG. 458.—Spiral Reversed, I.

Many names and varieties formerly used are now obsolete, as Dolabra, Ascia, etc.; and others are obsolescent. The modern tendency is toward simplicity; and bandaging is no longer the fine art it was once considered. The elaborate details formerly indulged in are not now considered necessary. For our present purpose bandages may be considered as—

1. *Simple*, including circular, oblique, spiral, spiral reversed, spica, figure-of-eight, recurrent.

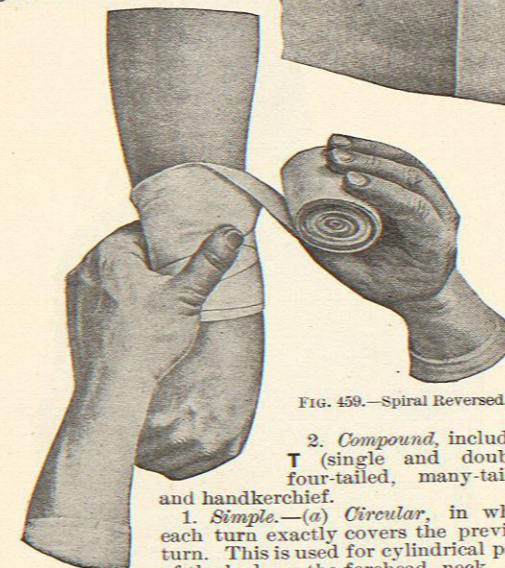


FIG. 459.—Spiral Reversed, II.

2. *Compound*, including T (single and double), four-tailed, many-tailed, and handkerchief.

1. *Simple*.—(a) *Circular*, in which each turn exactly covers the previous turn. This is used for cylindrical parts of the body as the forehead, neck.  
(b) *Oblique*. This is used to retain dressings loosely applied (as in burns); the succeeding turns do not overlap at all (see Fig. 457).

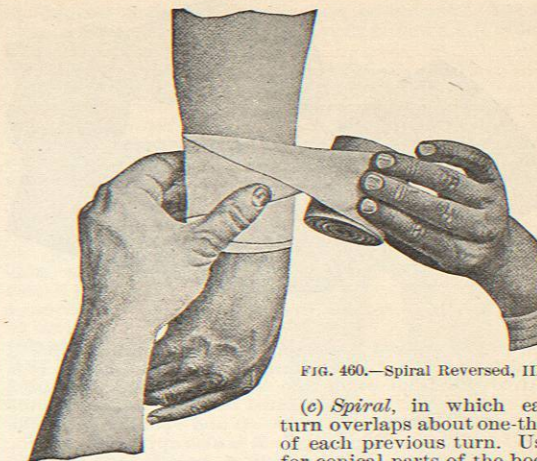


FIG. 460.—Spiral Reversed, III.

(c) *Spiral*, in which each turn overlaps about one-third of each previous turn. Used for conical parts of the body, but is now largely replaced by—

(d) *Spiral reversed*. As in above (c), the upper edge is tight, while the lower is loose, the spiral reverse was introduced to remedy this defect. To make a reverse, the bandage must be kept rolled up with three or four inches of slack only, and the bandage retained in place by finger and thumb; without traction turn the bandage down with a good slope downward, so that it is well doubled over. Some little practice is necessary to get the knack of doing this neatly and well. The commonest error is in

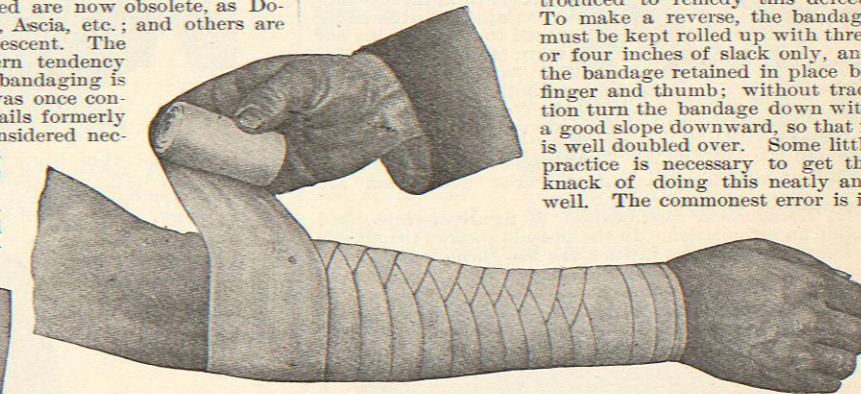


FIG. 461.—Spiral Reversed Completed.

holding too tightly what should be the "slack," and in not making sufficient slope. Figs. 458 to 461 show this bandage in progress and completed.

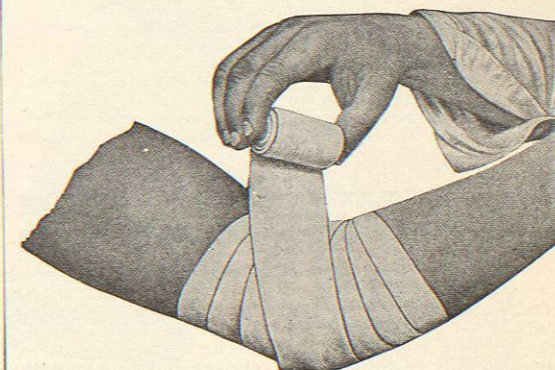


FIG. 462.—Testudo Inversa.

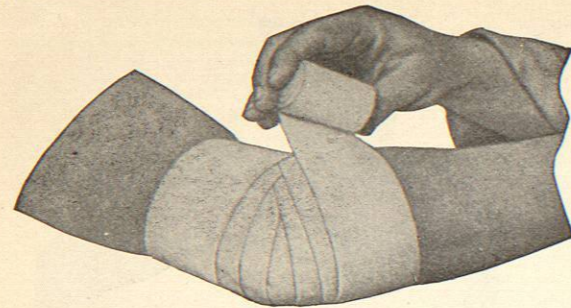


FIG. 463.—Testudo Reversa.

(e) *Figure-of-eight* looks on completion much like a spiral reversed, but its application is not the same. It is used over a joint or on the length of a limb, but care must be taken to have a wide sweep and open loops to the S; it is also applicable to projecting points, and to the junction of a limb with the trunk; in this latter position it is often called—



FIG. 464.—Head Bandage.

(f) A *spica*, the succeeding and overlapping turns being supposed to resemble an ear of corn (*spica*). There are many varieties of *spica*: ascending, descending, anterior, posterior, lateral, single, double.

(g) *Recurrent*. Used for amputation stumps and the head. For description see below.

(h) *Testudo* is a modification of figure-of-eight used about an articulation. In the *testudo inversa* the spirals overlap from without inward, the last turns covering the centre of the joint; while in the *testudo reversa* the first turn passes over the centre of the joint, and the spirals diverge therefrom (see Figs. 462 and 463).

HEAD.—*Recurrent bandage*.—Take a roller and make two circular turns round forehead; then at centre of forehead hold bandage, give it half a turn, take it over to occiput, have an assistant hold it there, and then after half a turn go forward again to forehead, just overlapping a portion of the previous turn. Continue this until the scalp is covered all over, and finish with two circular turns round the forehead; insert a few pins where the pieces overlap (see Fig. 464). A similar proceeding is used for an amputation stump.



FIG. 465.—Bandage of Galen.



FIG. 466.—Four-Tailed Bandage.

*Galen's bandage*, sometimes called poor man's bandage, or six-tailed bandage, is very easily made and applied. Take a piece of cloth or handkerchief wide enough to reach from the occiput to the eyebrows and long enough to come down and meet under the chin. Each side is

cut into three strips or tails, leaving a whole piece of from four to six inches on top of the scalp. Then putting the bandage in place take the two middle tails and fasten

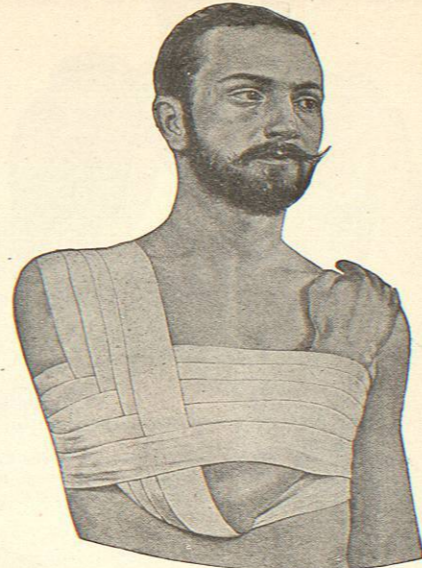


FIG. 467.—Velpéau's Bandage.

them under the chin, bring the two anterior tails backward and the two posterior ones forward, and fasten them over the temporal region (see Fig. 465).

*Four-tailed bandage* (for scalp and fracture of lower

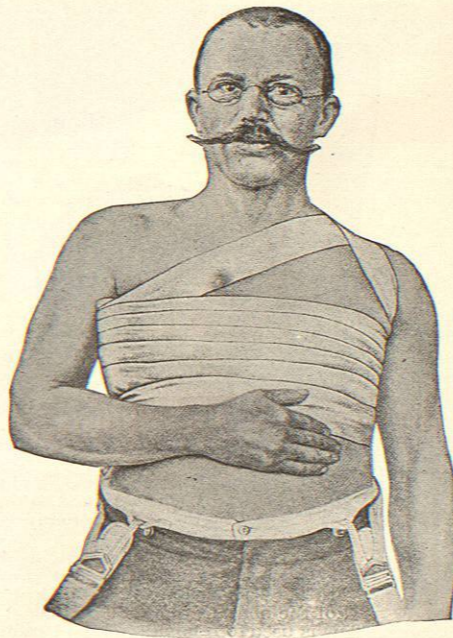


FIG. 468.—Desault's Bandage, I.

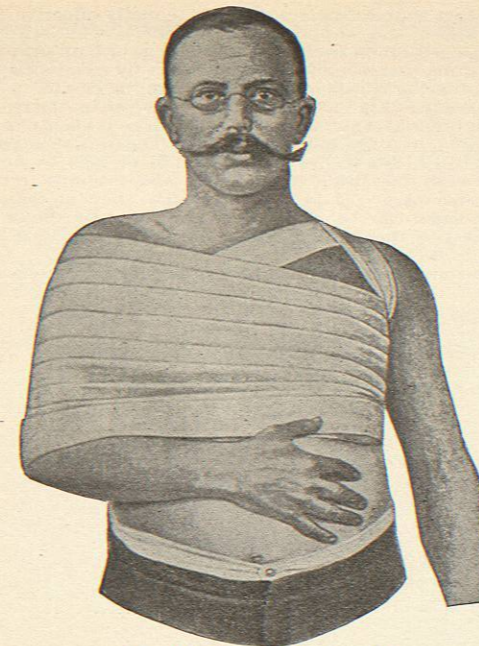


FIG. 469.—Desault's Bandage, II.

jaw) (see Fig. 466).—Fit the centre snugly over the chin, take the two under tails and bring them up over the top of the head well forward, and tie them tightly there; then bring the upper tails and tie them tightly over the lambda. Finally, tie these two knots together. Considerable pressure can be obtained with this bandage.

*Barton's bandage* (for fracture of lower jaw).—Begin

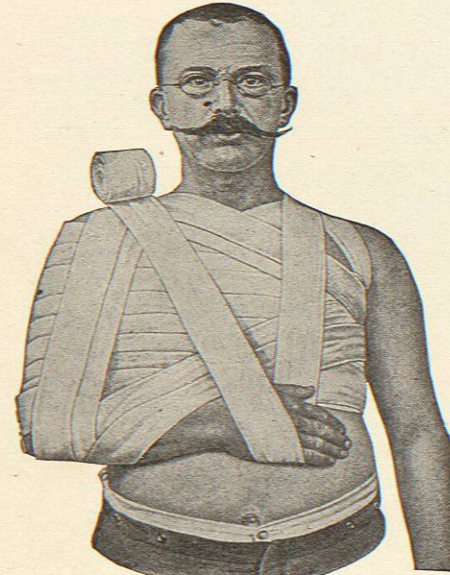


FIG. 470.—Desault's Bandage, III.

at external occipital protuberance, go outward, upward over right parietal bone, across vertex, down left side of face in front of ear, under chin, and up the right side of the face in front of ear to vertex, then over left parietal bone to starting point. Now take a turn round right side of jaw across chin, round left side of jaw, back to nucha, and up to occipital protuberance. Repeat from beginning and fasten at points of junction.

*For Eye*.—Place a narrow bandage over head and let it hang down in front of sound eye; then over this pass a circular bandage round both eyes. Fasten the posterior end of the narrow slip to the circular bandage, and lift the anterior end of the narrow slip and fasten it on itself, thus uncovering the sound eye (this is called Borsch's bandage).



FIG. 471.—Lower Extremity Bandaged.

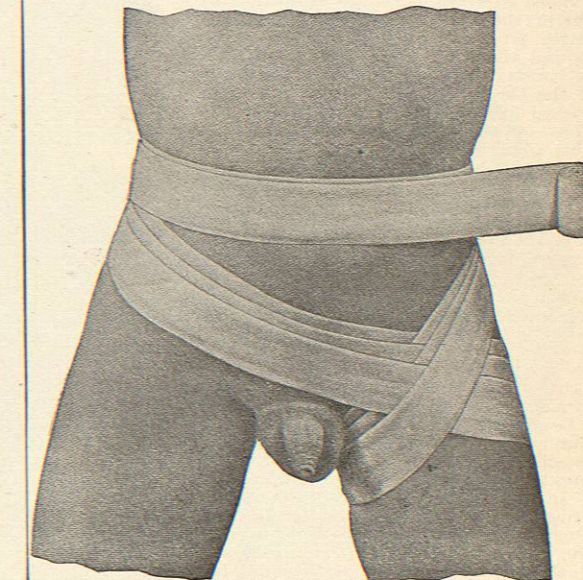


FIG. 472.—Spica of Groin.

**UPPER EXTREMITY.**—Take two circular turns about the wrist, then go obliquely across the dorsum of the hand to the extremity of the fingers, then by spirals and reverses ascend the hand to the root of the thumb. A few figure-of-eight turns will cover the wrist; the forearm is covered by spiral reverses, the elbow by a testudo or figure-of-eight, and the arm by spiral reversed turns.

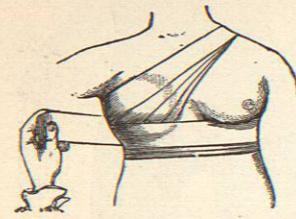


FIG. 473.—Breast Bandage.

For a *finger* or *fingers* separately use a roller of three-quarters of an inch thick, take two or three circular turns round the wrist, then go across the dorsum of the hand to the root of the finger, then take oblique turns to the tip of the finger; here take a circular turn and then by means of spiral reverses reach the base of the finger and finish by figure-of-eight turns between finger and wrist, and a couple of circular turns around wrist.

*Velpau's bandage* for fractured clavicle, which was formerly much employed, is now seldom used, being replaced to a large extent by adhesive plaster. It is shown in Fig. 467.

*Desault's bandage*, also much in vogue formerly, is now fast disappearing; it was cumbersome with its three rollers, axillary pad, and sling.

The pad was either too small to be of much use, or else large enough to be injurious. Illustrations of this bandage can be seen in Figs. 468, 469, 470.

**LOWER EXTREMITY.**—Take two circular turns round ankle, and an oblique across dorsum of foot to the toes; make a circular turn here, and with spiral reverses cover the foot; take figure-of-eight round ankle, spiral reverse up leg; treat knee with figure-of-eight, and thigh with spiral reverses (see Fig. 471). If the heel is to be covered a testudo can be employed.

*Spica of Groin.*—Place a layer of cotton in the groin to prevent irritation. Begin with a couple of circular turns around the waist away from the hip to be bandaged, then down over the front of the thigh from without inward, then around back of thigh and up over the front of the groin and around waist. This plan is repeated, each turn overlapping one-third of previous turn; and finally a circular turn is taken round the waist (see Fig. 472).

*Double spica of groin* is more of a curiosity than of practical utility.

*Spica of Shoulder.*—Two circular turns and spiral reverses round upper arm from behind forward, go over the shoulder across front of the chest under opposite axilla and return across the back to the shoulder whence it started; repeat this five or six times. This is a figure-of-eight, the large loop going round the chest.

*Bandage of Breast.*—Take the roller round the waist below the breast, commencing in front and passing toward sound side; then ascend over lower part of injured breast to opposite shoulder, returning by axilla to horizontal turn where it passes round the waist again. The oblique turns over the breast are continued and carried up to the shoulder till the gland is entirely covered (see Fig. 473).

Another simple *bandage of breast*, equally effective for compression and support, is made of a wide strip of cloth passed round front of chest over one or both breasts, under arms, and meeting at back, where by means of eyelets and lacing considerable pressure can be exerted.

*T bandages* (Fig. 456) are made of two strips fastened to each other at right angles; this bandage is chiefly used in keeping dressings in the perineum. The transverse part is fastened round the body, and the tail or tails brought up between the thigh and genitals and fastened to the transverse part. Those who want the "newest thing" in bandages can be referred to the "new T bandage," described in the *Medical Record* for February, 1900, p. 232.

Fixed dressings, plaster-of-Paris bandages, and handkerchief dressings will be described under article on *Dressings, Surgical*. R. J. E. Scott.

**BANFF HOT SPRINGS.**—LOCATION.—Rocky Mountains, Canada.

POST-OFFICE.—Banff, Alberta.

ACCESS.—From the east or west, via Canadian Pacific Railway.

According to the analysis of F. D. Adams, of the Geological Survey of Canada,

ONE IMPERIAL GALLON CONTAINS:	
Solids.	Grains.
Chloride of sodium .....	0.771
Sulphide of soda .....	0.624
Sulphide of potassium .....	0.673
Sulphide of magnesia .....	14.504
Sulphide of lime .....	39.428
Bicarbonate of lime .....	11.583



FIG. 474.—View of Hotel at Banff.

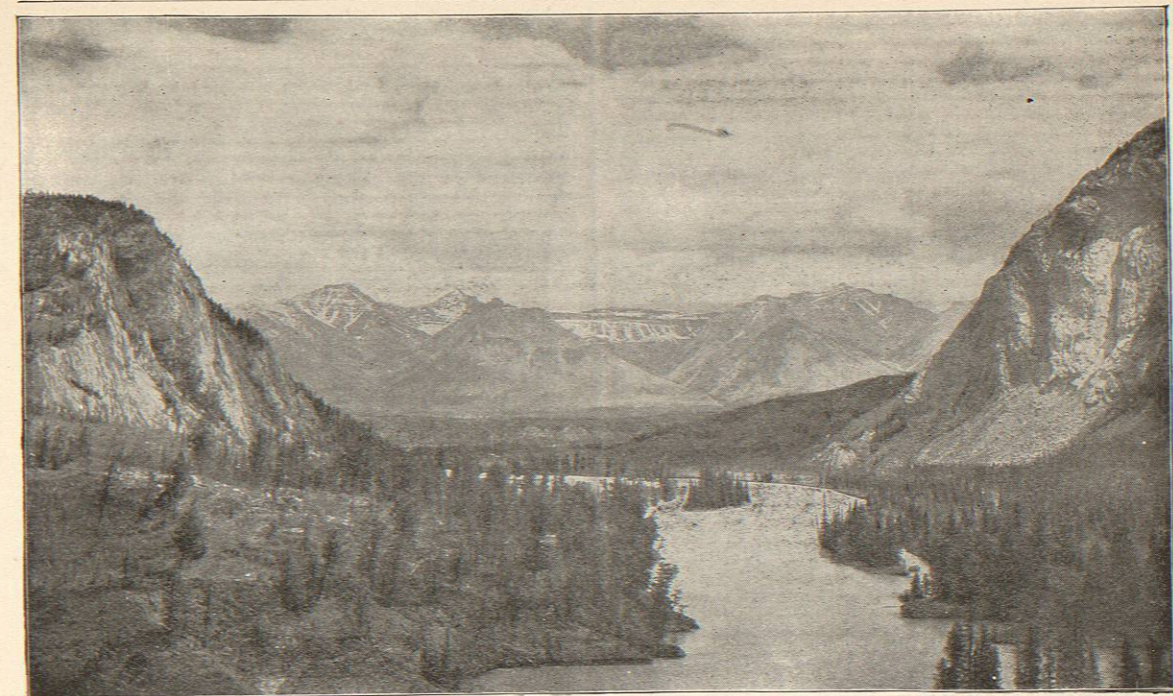


FIG. 475.—Bow River Valley in the Vicinity of Banff.



FIG. 476.—The Hot Springs Basin at Banff.