

SCIENCE AND PROGRESS.

A SIMPLE AND EFFECTIVE SUN DIAL THAT MAY BE MADE OF WOOD.

Interesting Experiment in Acoustics with an Ordinary Tea Bell as a Source of Sound, and Other Subjects of Interest.

In the cut here given is represented an experiment in acoustics in which the mouth is used as a resonator and an ordinary tea bell as a source of sound.



THE MOUTH AS A RESONATOR.

The tuning is effected by moving the tongue back and forth, also by opening or closing the lips. By a few trials a position of the mouth will be found which will cause it to respond to the sound of the bell and act as an efficient resonator.

A Jew's harp may be used in connection with the mouth as a resonator. In this example the reed of the harp is made to yield a variety of tones, dependent on the adjustment of the mouth to the force of the breath. The fundamental note of the reed is the closest and best, and always distinctly heard. The forced overtones are less satisfactory, but suffice for playing tunes that are recognizable.

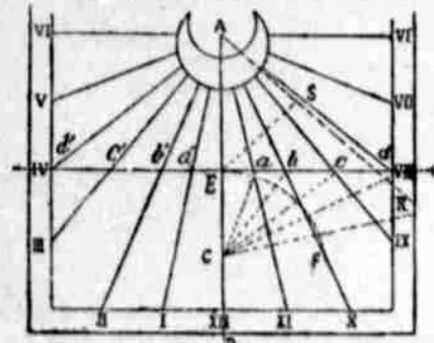
Rainfall Upon the Plains.

"Is the rainfall increasing upon the plains?" is the subject of an article by Henry Gannett in a recent number of Science. Thirty years ago all the country west of the Missouri was considered the "great American desert," in which, without irrigation, agriculture was an impossibility. But the stream of immigration has swept, with each succeeding year, further and further up the slope of the plains, driving the border of the desert before it. It is almost universally believed in this region that settlement and tree planting have induced greater rainfall. Mr. Gannett thinks other causes are involved. An examination of both the annual and the seasonal distribution of the rainfall in twenty-six stations where rainfall records have been kept for long periods, according to Mr. Gannett, shows that there have undergone no material change since settlement began in that region. "We may," says he, "therefore dismiss as baseless the popular idea of an increase in rainfall, either annual or during the growing season, and look elsewhere for an explanation of the phenomena of settlement which the plains present."

Experience has shown that a much smaller quantity of rain is essential than was supposed, and to his mind, there is little more to be said. Cultivation adds greatly to the economy of the rainfall. The surface of the plains in an uncultivated condition is mainly bare, hard ground, but slightly protected by its covering of grasses. From such a surface the rain flows off freely, and an unusually large proportion of it finds its way into the streams, while a correspondingly small proportion sinks into the ground. The farmer, with plow and harrow, changes all this, and retains in the soil most of the rainfall. From year to year the supply in the soil increases, so that the subsoil becomes in time a reservoir from which the surface soil may draw in times of drought. Furthermore, the scanty vegetation offers little protection against evaporation, which is excessive upon the barren plains, but the ampler mantle which cultivation spreads over the soil prevents its moisture from disappearing in the atmosphere with so great rapidity.

How to Make a Sun Dial.

A simple sun dial can be easily made out of wood or pasteboard, says Popular Science News, which may be placed out of doors in any convenient place, or upon the window sill of a room with a southern exposure, and will indicate the solar time as accurately as the more expensive stone or metal dials.



A SUN DIAL OF EAST CONSTRUCTION.

The method of drawing the hour lines, says the authority referred to, is as follows:

Take a piece of wood or pasteboard of any convenient size, and draw upon it the line AB, which will be the noon or XII o'clock line upon the dial. Then make the angle BAR, which must equal the latitude of the locality. At Boston this would be about 42-1/2 degrees. From any point upon AR, as S, draw SE perpendicular to AR; and at E draw GEH perpendicular to AB. Measure upon AB, EC equal to ES, and from the point C as a center draw the quarter circle EF, which is to be divided into arcs of 15 degrees, commencing at E. Through these divisions draw the lines Ca, Cb, Cc, Cd, etc., and then from A draw the lines passing through a, b, c, d, etc., which will be the hour lines, where the shadow will fall. Lay off on GE the points Ea, Eb, Ec, Ed, equal to Ea, Eb, Ec, Ed, and draw the hour line from A through them in the same way. It should be noted that the VI o'clock line is a perpendicular to AB drawn through A. The point to which the VII o'clock line is drawn is not shown in the diagram, for lack of room; but it is found in the same manner as the others—by extending the line EH, and extending the lower dotted line from C till A intersects. The hour lines before VI in the morning and after VI in the afternoon are a continuation of the lines on the opposite side of A. Thus, the V hour line in the morning is found by extending the V hour line for the afternoon through the point A. The style which is to cast the shadow is of the shape of the triangle EAS, with the side AS, which casts the shadow, prolonged to any convenient length. It must be placed upright on the dial in the direction of the line AE.

To set the dial in position, it is only necessary to place it at noon time so that the shadow of the style falls along the XII line.

PHYSIOLOGY AND HYGIENE.

Erroneous Employment of Electricity. Useful Suggestions for the Toilet.

In considering the use and abuse of electricity in medical practice, The Medical Register says, among other things, that many fancy that there is nothing to be done but start the current and apply the electrodes; that electricity can't do any harm if it don't do any good, and that its systematic application is mere ceremony. It is this lack of knowledge that begets lack of faith both in the patient and operator. The careless use of the battery, the ignorant application of galvanic and faradaic currents ad libitum, not only fails signally, but may produce genuinely deleterious effects. It is a great misfortune that the advertising of electricity as a cure all has thrown discredit on electro-therapeutics, which have been branded, therefore, to some extent as a kind of quackery. This is even more so with magnetism.

Occasionally we come across some who have really tried a battery, but it has, perhaps, been the wrong current, applied too strong or too weak, and generally in the wrong place altogether. It is a great pity that it is possible for people to trifle with such a valuable therapeutic agent as electricity, which is often brought by pure ignorance into undeserved disrepute. But it is not only the unprofessional experimenters who err in this way. Many older or less progressive practitioners, who hear the merits of electricity noised abroad, invade its agency without understanding properly the mode or theory of its application. It is in this way that the usefulness of a great remedial agent is hindered and perverted.

To Prevent Death from Chloroform.

In a paper read before the Baltimore Academy of Medicine, Dr. J. J. Chisholm reports resuscitation in several desperate cases of apparent death produced by chloroform, by suspending the patient promptly by the feet, and long enough to allow the blood to gravitate to the brain. Should one be without assistance and unable to accomplish the object otherwise, Dr. Chisholm advises to stoop quickly, throw the patient's legs over your shoulders, hang on to the feet in front of you, and then lift yourself. The patient's body, as you get upon your own feet, will hang from your back, with the head down. Now you have time to call for help; but never wait for the help to come before you practice suspension, because with the moment's delay your patient may have passed from dying into death.

Dr. Chisholm finds that the feeble pulse will always respond promptly to suspension, and this suspension is preferable to hypodermics of whisky or ether, or the inhalations of nitrate of amyl. Should vomiting occur the suspended position is better for the patient than while lying upon the table, because there is less liability of food particles getting into the larynx. Inversion of the body gives the contents of the stomach a free vent. Dr. Chisholm has so much confidence in the value of suspension with chloroformed subjects that he is disposed to believe that the vital centers cannot fail with the body hanging head down, and has often operated with the body in this position when there was tendency of failure of the heart, even lying supinely.

Sage Leaf Dentifrice.

A leaf of pure, simple sage is the best tooth brush and preserver that nature has given to man, says a writer in Dress.

Keep a sage plant in your dressing room or a branch of it on your dressing table, if you have not a garden from which to pluck it ad lib. You may use the sage leaf fresh or dry, it is immaterial how you use it, so long as you use it some way every day.

The water with which you rinse the mouth during and after the sage leaf friction should be just tepid, and a drop or two of myrrh may be added to the water, as this helps to strengthen the gums and imparts a pleasant odor to the breath.

Perspiration of the Head and Dandruff.

To prevent undue perspiration of the head and to strengthen the hair, and promote its growth, lay rum and quinine in the proportion of one pint of rum and one dram of quinine well rubbed into the roots, once a week, is excellent.

Among useful remedies for removing dandruff is soap bark. A lather is made with the soap bark and water and the scalp cleaned with it. The yolk of an egg well worked into the scalp, a little at a time with the fingers, and then washed with water, is a favorite cleanser with some people. Pleasant to use and quite efficient, is a little gum camphor dissolved in bay rum.

Fine Lines and Wrinkles on the Face.

Dr. Anna Kingsford suspects that in many cases fine lines and wrinkles of the skin are mainly due to a habitual use of hard water for toilet purposes. She advises ladies who value their good looks to use distilled water, which may be bought at any drug store, if naturally soft water cannot be had. More harm is done to the skin by the use of hard water and strongly alkaline soap than can be easily told.

SOCIAL ETIQUETTE.

A Delightful and Flattering Form of Hospitality.

"Ladies' luncheons are more gorgeous, more fashionable, more personally flattering than any other attention," says Harper's Bazar, which adds, apropos of the same:

"It is one of the fancies to say, 'Shall I luncheon with you?' 'I luncheoned with him,' instead of saying, 'I lunched with him.' One hostess of the winter gave a large luncheon of fifty or sixty, having small groups around the room, without tables, served as they would be from a supper table, from one large buffet at the end of the room.

Now, such a luncheon as this has great advantages. It enables a lady to invite more than she can to a 'sit down lunch'; it is a useful invitation as enabling a hostess to show a considerable amount of civility to a great number at comparatively little trouble to herself. She can have young ladies, single ladies, married ladies, old ladies, all of whom like to meet each other. She can have persons at such a luncheon whom it may not be easy to ask to dinner, and it is always a pleasant way of entertaining a stranger. She can offer to them all the same delicacies—salads, pate, ham, turkey, oysters, ice, jellies—that she would offer at a dinner, beginning, of course, with bouillon in cups.

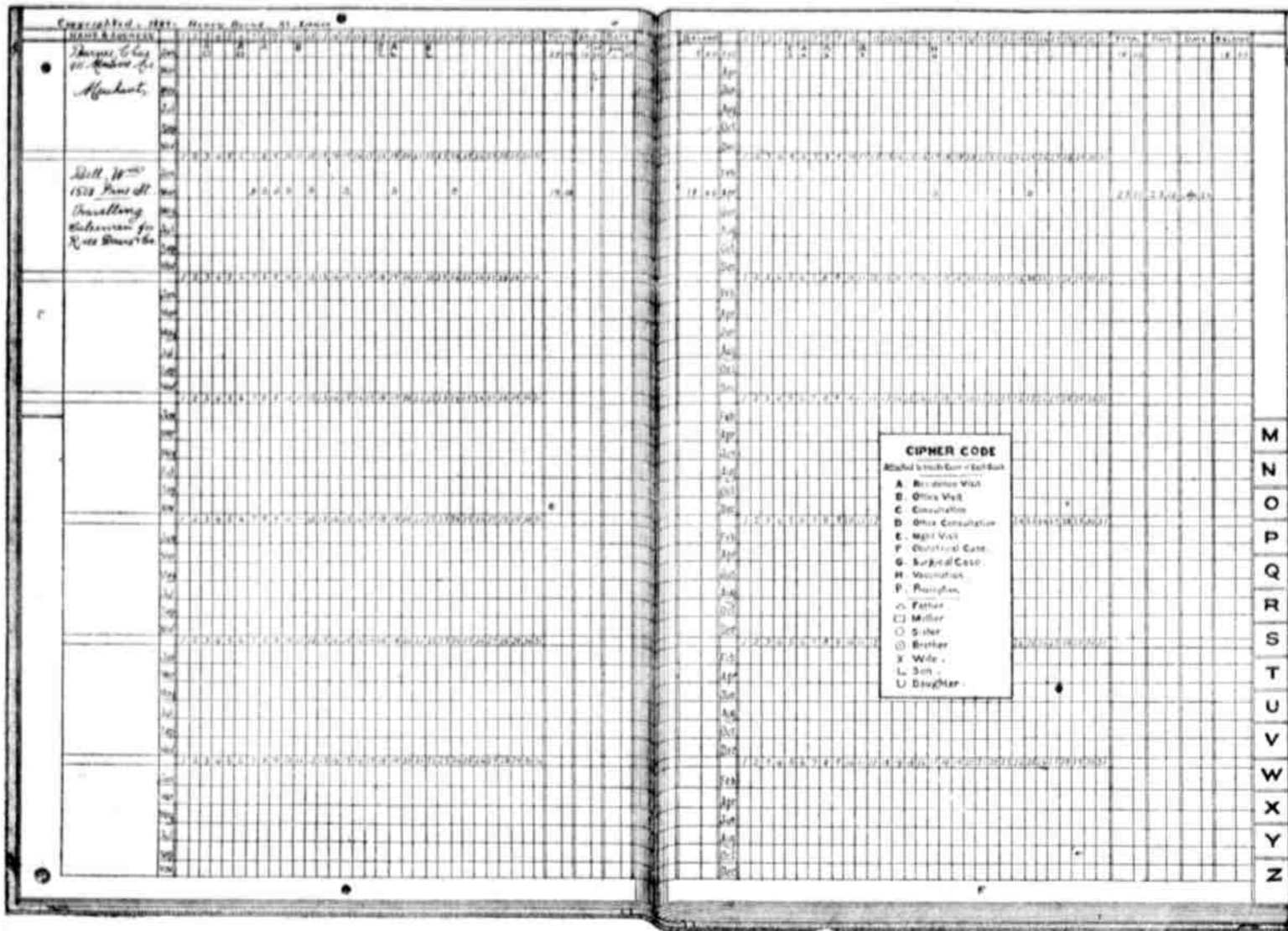
Ladies do not remove their bonnets at a luncheon; they should, however, wear a warm wrap to remove in the outer room, because the fact of sitting in a crowded room makes them very much too warm for the outer air, and in danger of taking cold.

Chronic Unpleasantness.

Trifling discourtesies of speech and manner constantly indulged in do more to destroy the peace of a household than an occasional war of words which lasts for a brief period and is then at an end. Chief among the causes to create a murky home atmosphere is the habit of "nagging" one another. Husbands and wives give expression to every petty feeling of irritation, and bandy words back and forth till some noble hill assumes the proportions of a mountain. A tendency to nag goes unheeded among the children, and almost before the parents are aware there is a chronic condition of unpleasantness in the home.

A BOON TO PHYSICIANS.

Bernd's Physician Office Register



The above cut shows Register open. The book is prepared with special reference to improving the system of recording calls, visits, etc. It is complete, simple comprehensive, and as a labor saving method of keeping accounts, will at once commend itself to every Physician in the land. Your attention is called to the fact that the account against a patient FOR AN ENTIRE YEAR is contained within a space three inches in width.

This book is 12x17 inches; contains 100 pages; each page divided into 7 spaces, thus providing for 700 accounts, contains a condensed cash account showing (on one page) cash receipts for both "regular" and "transient" patients for each day in the year, besides 4 additional ruled pages for memoranda, such as "the address of nurses, future engagements" "private consultations," etc., etc. The book is alphabetically indexed on linen tabs, substantially bound Russia buck and corners, cloth sides, spring back, and nicely finished.

Prices, 700 Account Office Register, \$5.00.

1400 Account Office Register, \$8.00

BERND'S POCKET REGISTER.

Its Advantages are as Follows:

- 1st. No Posting—No Transferring—No Indexing.
- 2d. One Writing of Patient's name for entire year.
- 3d. It enables you to keep the run of your accounts without referring to auxiliary books.
- 4th. Can be commenced at any time during the year.
- 5th. The price is far below the cost of keeping accounts in the old style, viz: Visiting List, Journal and Ledger—this book combining all three.

This cut shows book open, with example similar to that shown above. Cipher code is embossed in gilt on inside of cover.

The Register when closed is 4 1/2 inches, convenient size to carry in pocket.

The lines of the short leaf are adjusted to the long. When the short leaf is turned to the right, the first half year is visible. The Book is Gilt Edged, bound in Black Seal—flexible—with inside pocket and elastic tablet. Contains condensed cash account, showing at a glance Receipts from Regular and Transient Patients for entire year—besides eight Memorandum Pages, Pencil and Holder, and is closed by a Silk Elastic Band.

Extracts from a Few of the Many Letters Received,

I am gratified to say that for the first time in long years of practice, I am able to keep my accounts without having to suffer the drudgery of cumbersome book keeping.—Dr. H. Tuholske, St. Louis.

It is just the thing I want.—Dr. G. Swan, Hartford, Connecticut.

The book is a treasure to any busy Doctor, it saves an amount of tedious work at the end of the month which is particularly agreeable.—Dr. E. A. Chapoton, Detroit, Michigan.

I have lost enough this A. M. to pay for the book, having to make out an account in haste.—Dr. Jno. Boardman, Buffalo, N.Y.

It is by far the most complete work of its kind I have ever met with—shall take pleasure in recommending it to my friends in the profession.—Dr. S. H. Chester, Kansas City, Missouri.

I regard it as the only Register in use adapted to the Physician's requirements.—Dr. J. T. Kent, St. Louis, Missouri.

For the past fifteen years I have used several kinds of Registers, all very good, but none beginning to compare with that purchased from you.—Dr. W. C. Barker, Hummelstown, Pennsylvania.

I have found it useful and exceedingly convenient.—Dr. Benj. T. Shinnell, Philadelphia, Pennsylvania.

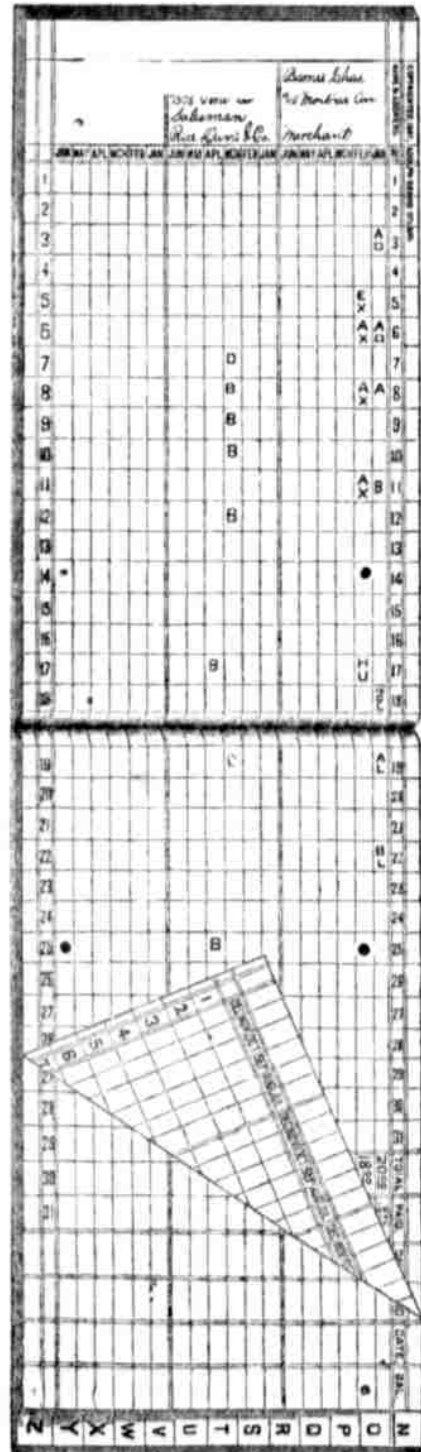
I must congratulate you on the introduction of such a perfect method—every member of the profession should extend to you their appreciation by adopting the same.—Dr. Wm. Bird, Chester, Pennsylvania.

I would not do without it for fifty dollars a year.—L. W. Clark, Rushville, Illinois.

PRICES, 300 Account Pocket Register, \$3.00.
440 Account Pocket Register, 4.00.



SECTIONAL VIEW SHOWING ARRANGEMENT OF ALTERNATE LONG AND SHORT LEAVES



WESSEL & DOBBINS,
Western Agents,
LINCOLN, NEBRASKA.

New Burr Block.