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## Notes and Queries.

NOTES TO CORRESPONDENTS.

Names and Address must accompany all letters or no attention will be paid thereto. This is for our information and not for publication.

References to former articles or answers should give date of paper and page or number of question. Inquiries not answered in reasonable time should be repeated; correspondents will bear in mind that some answers require not a little research, and, though we endeavor to reply to all either by letter or in this department, each must take his turn.

Buyers wishing to purchase any article not advertised in our columns will be furnished with addresses of houses manufacturing or carrying the same.

Special Written Information on matters of personal rather than general interest cannot be expected without remuneration.

Scientific American Supplements referred to may be had at the office. Price 10 cents each.

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Minerals sent for examination should be distinctly marked or labeled.

(8467) H. S. P. writes: In 1666 Sir Isaac Newton explained that white or colorless light is a mixture of an infinite number of differently colored rays, differing in refrangibility, the red being least and the violet most refrangible. Does this fact apply only to light or is white paint also a mixture of differently colored ones? A. In mixing lights the different tints are cast upon a surface and there blend. We see the combined effect of the different rays. This is the manner in which the seven colors of the spectrum as Newton named them, red, orange, yellow, green, blue, indigo, and violet, may be combined to form white light. Paints are mixed in color by a different process. When white light strikes a paint the paint absorbs some of the rays and reflects the rest. The rays reflected give the paint the color by which we recognize it. Thus a shade of yellow may be found which absorbs all of white light above the green and reflects the rest. A blue may be found which absorbs all below the green and reflects the rest of white light. If these two paints are mixed they each absorb as before, and because green is the only color which both can reflect, the mixture absorbs all of the white light except green and reflects only green. This is the reason why we say that yellow and blue mixed are green. If instead we had cast the yellow and the blue light of these paints upon a white surface, the two lights would have combined and given us white, since these two colors contained all the elements of white light. You cannot mix colored paints to produce white. If paints of all the colors of the rainbow were mixed, the result would be a very dark mud, a color difficult to name.

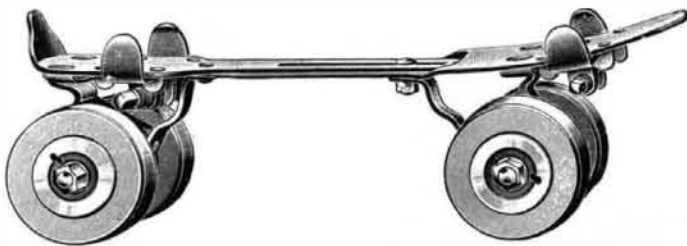
(8468) J. C. P. asks: How may nickel be removed from copper articles by electrolysis? Will an ordinary plating solution do the work, provided the nickelled copper is made the anode? A. The plating can be transferred to the cathode by making the plated article the anode as you suggest. As soon as the nickel is off from any part, copper will then be carried over.

(8469) G. O. H. asks: Will you kindly inform some inquiring friends on what conditions depend the hazy appearance of the atmosphere known as "Indian summer" at this season of the year? I can find no reference to it in such works on meteorology as I have access to. A. The hazy atmosphere of late summer and early autumn is due chiefly to solid particles in the air. You will find it described in Russell's "Meteorology," price \$4 by mail.

(8470) J. O. J. asks: What is the true theory of the wind going into the Wind Cave in South Dakota, at certain seasons, and going out again at other seasons? And does this prove that there are two openings? A. This phenomenon has been noticed in caves for at least three thousand years. The theory of the old Greeks was that caves were the lungs of the earth; hence their word "antron," a breathing-place. Aolus was fabled to sit in a cave holding all the winds in his fist. Travelers' tales relate that the blowing caves in Asia often carry caravans away. Thomas Jefferson vividly described the blowing cave of Panther Gap in the Alleghenies. Prof. Silliman, in 1852, sought to explain the blowing of Mammoth Cave on chemical principles. The theory now accepted is that the cave-air has a uniform temperature the year around. When the air outside is warmer an outward current is created, and the reverse when the outside air is colder. The atmospheric current does not "prove two openings;" but if they exist the fact might help to increase the activity of it by ventilation. This subject is fully discussed in Hovey's "Celebrated American Caverns."

(8471) W. M. R. asks as to the method of making what is called French silver gray on silver-plated hardware. Is the finish done by hand or on a wheel? If on a wheel, what kind of a wheel? A. Place the silver-plated ware in an aqueous solution of penta sulphide of potassium. Allow it to remain until the desired color is obtained. This depends upon the strength of the solution and the time it is immersed. Wash the articles, dry them, and polish with a buff wheel covered with chamois skin charged with fine rouge or upon a cotton wheel charged with the same material.

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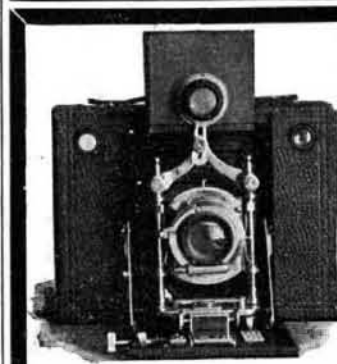
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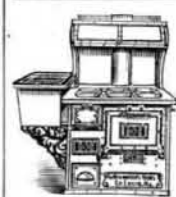
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