_	
Note Given	To th
(1) $a+b+c=-p$ , (2) $ab+bc+ca=q$ , and (3) $abc=r$ .	DE
Required (4) $d+e+f = \frac{1}{(pq-3i)}$ , (5) $de+ef+fd = \frac{1}{(r^3-2pq)}$ .	whetl
	if eo,
and (6) $def = \frac{1}{r}(pq-r)$ , where $d$ , $e$ , $f$ are $= \frac{d+b}{c}$ , $\frac{b+c}{a}$ , $\frac{d+c}{b}$	
Multiply (1) by (2) and	RE
$a^{2}b^{3} + ab^{2} + b^{3}c + bc^{2} + c^{2}a + ca^{2} + 3abc = -pq$ (A)	more
$\therefore a^{2}b^{2} + ab^{2} + b^{2}c + bc^{2} + c^{2}a + ca^{2} = 3r - pq;  \therefore d + c + f = \frac{1}{2}(2q - 3r).$	sider
	of m
A lso, $a^{2}b^{2} + ab^{2} + \&c. + 2abc = r - pq$ ; $\therefore def = \frac{1}{r}(pq - r).$	itar
Similarly from (A) $2pq - r^3 = a^3b^3c^3 + 2(ab^3 + a^3b + \&c.) + 6abc$	labor
$r^{3}-2pq = a^{2}b^{2}a^{2}+2(a+b)(b+c)(c+a)(c+a)$	expe
$\frac{1}{r} = \frac{1}{c} $	is ve
= de + cf + fd.	
9. If a, b, c are the roots of the equation $x^3 + px - gr = 0$ , show that $a^5 + b^5 + c^5$ : $a^2 + b^2 + c^2 = r$ ; 1.	THE
-Toronto University, 1873.	
As in (8) we have $a+b+c=0$ , $ab+bc+ca=p$ , and $abc=\frac{2}{5}r$ .	
Squaring (1) and substituting $2p$ for $2(ab + \&c.)$ we have	To th
$a^2+b^2+c^2=-2p$ (A). Cubing (1)	SIR
$a^{3}+b^{3}+c^{3}+3(a+b+c)(ab+bc+ca)-3abc=0, : a^{3}+b^{3}+c^{3}=a^{6}b^{7}$ (B)	curso
Multiply (A) and (B) and	to the
$a^{5}+b^{5}+c^{5}+a\ b^{8}+a^{7}c^{5}+b^{3}a^{3}+b^{2}c^{5}+c^{7}a^{3}+c^{7}b^{3}=-\frac{3}{5}a^{2}pr,$	sort
i.e., $a^{3} + b^{3} + c^{5} + (a+b+c)(a^{2}b^{2} + b^{2}c^{2} + c^{2}a^{2}) - abc(ab+bc+ca).$	teach
$\therefore a^3+b^3+c^3=-2pr C, \therefore A+C=r, Q. E. D.$	"T
10. If $a+b+c=0=x+y+z$ , show that	contin
$4(ax+by+cz)^3 - 3(ax+by+cz)(a^2+b^2+c^2)(x^2+y^2+z^2)$	and o
-2(a-b)(b-c)(c-a)(x-y)(y-z)(z-) = 54abcxyz.	his ov
-Toronto University, 1883.	pressi
	which

## Correspondence.

## To the Editor of the CANADA SCHOOL JOURNAL.

**DEAR SIR**, - Much has been written regarding proper and remunerative employment for women. Silk culture, poultry raising and many other themes have been thoroughly ventilated and the result has no doubt been very beneficial. But there are many ladies who have no opportunity to raise silk worms or follow any employment of this kind. To this class I wish to open what to me was entirely a new field. Some three months ago an uncle of mine from Albany, N. Y., was visiting at our house. They were talking of plated ware which he was engaged in manufacturing; to gratify my curtosity, he made a plating machine and replated our knives, forks, spoons, and castor; it only cost \$4, and it did the work perfectly. Some of our neighbors seeing what we had plated wanted me to plate some for them. Since then I have plated 22 days and have cleared during that time \$94.34. At almost every house I got from \$2.00 to \$3.00 worth of plating to do, and such work is most all profit. Just for replating one dozen tea spoons I got \$1.75. This work is as nice for ladies as for gentlemen as it is all indoor work, and any one can do it. My brother Anthony plated two days longer than I did and he cleared only \$91.50. I am getting up a collection of curiosities. To any of your readers sending me a specimen I will send full direction for making and using a plating machine like mine, that will plate gold, silver, and nickel. Send small pieces of stones. ores, shells, oid coins, &c. Any kind of geological specimens. What I want is to get as many different specimens from as many different places all over the country as I can. Please address,

MISS M. F. CASSEY.

e Editor of the CANADA SCHOOL JOURNAL.

AR SIR,-I wish an answer through the columns of your paper her a teacher can be compelled to attend the conventions, and how often. Yours,

WM. JNO. MCLEAN.

EFLY.—We do not know that a teacher can be compelled to d. If he went under compulsion he would probably do harm than good by his presenc. At the same time we conthat every teacher owes it both to himself and to his proon to make some sacrifices of time and money for the purpose aking the conventions successful. Wide swake teachers make point of conscience to he present as often as possible and to for the elevation of the brotherhood of teachers. A comory attendance would in some cases entail a disproportionate nse, but a teacher who is habitually absent from the convention ry shortsighted with regard to his own real interests. - [EDITOR.]

## PERSONAL CHARACTER AND EXAMPLE OF THE TEACHER.

e Editor of the CANADA SCHOOL JOURNAL.

a, - Children will form habits which will be the charm or the of the social circle, which will be instruments of good or evil eir fellow-men, and blessings or pests to their country. What of habits they shall form depends to a certain extent on their era.

'he personal influence of the teacher" it has been said "is nual in its effects. In a certain sense he is teaching always, ften when he least thinks of it. He is continually imparting vn likeness, reproducing in the minds of his pupils the imions and convictions of his own. A silent influence is at work he little suspects. The words which drop unobserved from his lips, the acts which he performs mechanically and immediately forgets, his daily habits and deportment, have their effect, and may be made subservient to the highest ends. The very way in which his school is managed, its order and impartiality, the tone of kindness which pervades it, and the reverence openly paid to what is good and true and generous, are so many parts of moral training." It is by these influences that the habits and character of children are formed. They are more powerful than direct teaching, for lessons only enforce what is right, but example allures to the practice of it.

It must not be forgotten that the influence of the teacher may be for evil as well as good. Hence the importance of striving carnestly by personal discipline for every qualification of a good teacher. It is important to remember that character cannot be assumed at pleasure; it is a growth which has its roots in the soil of bygone years: nothing is in the character which has not grown there. Yours truly,

Comber, Ont.

MARY LADD.

## To the Editor of the CANADA SCHOOL JOURNAL.

SIR,-As you have not in my opinion paid sufficient attention recently to educational affairs in the Queen City, I take the liberty of writing to you concerning a subject, which is at present causing some uneasiness among some of the public school teachers in our city. At the close of last year Mr. L. R. O'Brien was appointed Superintendent of Drawing in the Toronto public schools. The Inspector introduced him to the teachers with a flourish of trumpets, and Mr. O'Brien in a two hours speech, which some admired very much because they did not understand what he meant, laid down some theories by which he proposed to be guided. Probably Oberlin, Ohio. | the effort exhausted him, or possibly he may have been trying since