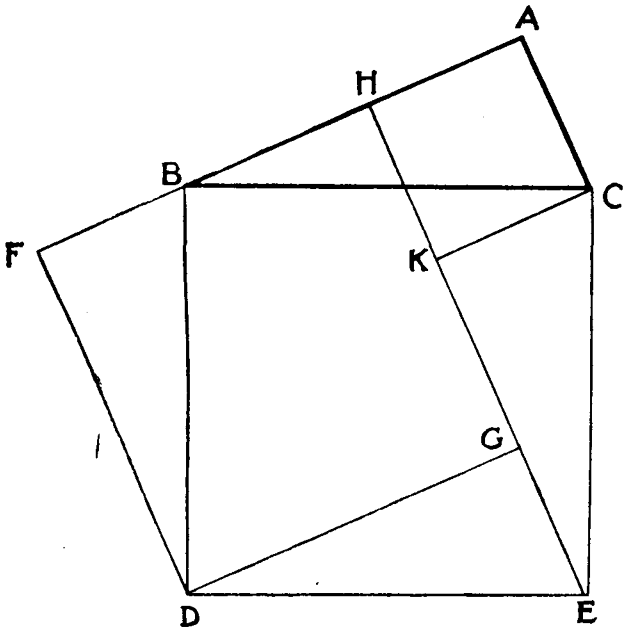
$+x=0$. Go along line through A parallel to OX till a point B n the graph $x=f(t)$ is met, and vertically parallel to OY until a oint C in the graph $y=\phi(t)$ is met. The fourth vertex D of the ectangle ACDB is a point in the graph of the eliminant of t in he equations $x=f(t)$, $y=\phi(t)$.

When $t=\text{OM}$, $x=\text{MB}=\text{ON}$, and when $t=\text{OH}$, $y=\text{HC}=\text{ND}$. Vhen $x=\text{ON}$, $y=\text{ND}$. Hence D is a point in the graph of the liminant. By taking a series of points in $y+x=0$, points in the raph of the eliminant can be found. (In the Figure the graph of he eliminant is the line drawn in full).

A. G. BURGESS

The Theorem of Pythagoras.—Here is a pendant to Dr Gibson's beautiful dissection of the three squares. I am pretty ure that his proof is new to the world, but I am not sure that mine s so. There are about fifty proofs, differing more or less from each ther, but there are only some half a dozen worth remembering or



eaching. The proof I submit (not one of the half dozen) was levised in 1859, when I was a young student in St Andrews, and t may probably have been given long before that date.

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The construction is

Let $\triangle ABC$ be right-angled at A.

On BC describe the square BDEC.

Produce AB, and to it from D, E draw DF, EH perpendicular.

From C, D draw CK, DG perpendicular to EH.

The steps of the proof are that

(1) $\triangle ABC$ is congruent to $\triangle FDB$.

(2) .... $\triangle GDE$.

(3) .... $\triangle KEC$.

(4) DGHF is the square on AB.

(5) AHKC..................... AC.

Then

$$BDEC = GDE + KEC + DGKCB$$

$$DGHF + AHKC = FDB + ABC + DGKCB.$$

Remark and Query. — This "theorem of Pythagoras" or "theorem of the three squares," which is the 47th proposition of the first book of Euclid's *Elements*, is known in France under the name of *Le pont aux ânes.* The same name — *the asses' bridge* or *pons asinorum*—is in the United Kingdom bestowed on the theorem:

The angles at the base of an isosceles triangle are equal, and if the equal sides be produced, the angles on the other side of the base are equal,

which is the 5th proposition of the first book of Euclid's *Elements.*

How comes it that the same nickname has come to be applied to two so different theorems?

The usual explanation of the name is that when stupid pupils begin the study of geometry, they cannot get across this bridge. Such an explanation is intelligible if the bridge is Euclid I. 5, but not so intelligible if the bridge is Euclid I. 47. A pupil who can understand Euclid I. 1–46 would never fail to understand Euclid I. 47, but a pupil who understood Euclid I. 1–4 might well stumble at Euclid I. 5.

Can any reader give an early authority for the name *asses' bridge?*

J. S. Mackay

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