other functions. Combinations of these elementary devices can handle more complex functions.

For our purpose, the principal problem would not be how to solve any given equation, but rather to examine physical data which are to be collated and see what simple computational array could be set up to handle them.

It is more than likely that a large class of data can be handled by one simple class of analog computer. Thus, a large mass of data could be processed at low cost. Another class of simple computer might be expected to be suitable for other groups of data. The moment one asks for complete versatility, he is likely to run into high cost.

Storage

Although simple functional relationships are easily set up with analog devices, even the simplest calculations often require temporary storage of numerical information. Storage is one of the important factors in all large and expensive computers, and there are many practical solutions to the problem. There are not so very many cheap solutions to this problem, and what we have been discussing might well require further investigation in order to provide economical storage elements. Of the various storage elements, such as magnetic tape, magnetic drums, cathode ray tubes with external wire gauze electrodes, and ring elements of special magnetic materials, the latter are the most promising. They consist of very tiny rings or toroids made of Deltamax or related magnetic alloy material. These are characterized by an almost rectangular hysteresis loop and require extremely small magnetizing force to reach saturation. If such a loop is used as the core of a small transformer, then a negative pulse through one of the windings will induce an output pulse in the other winding and also saturate the core. Additional negative pulses will produce no further output and, in effect, one "bit" of information has been stored in the core. At any later time, this information can be "read out" by interrogating the system with a positive or reading pulse. This will produce one, and no more, output pulse, and the core has been returned to its original state—ready at any time to receive another bit of information. The discovery or development of other schemes for information storage is a large and promising field of investigation in itself.