A majority of the stone artifacts recovered were fashioned by a percussion-flaking technique, and they show very limited evidence of retouching. These objects included (i) side and end scrapers, with the plano-convex form most common; (ii) crudely flaked knife blades; (iii) cobble choppers, the shape of which are similar to those of the southeastern California region; (iv) an abundance of large primary flakes, perhaps used as wedges for the opening of mussel shells; and (v) occasional projectile points. Three of the four projectile-point forms are comparable to those of the San Pedro stage of the Cochise, and the fourth bears a resemblance to the Pinto-Gypsum point of California. Slate and shale are the most commonly represented materials used in the manufacture of these stone implements, with basalt, jasper, quartz, and rhyolite porphyry also occurring. In addition, several one-handed bifaced manos, made from locally gathered granite rocks, were found. The surface survey disclosed no basin metates of the Cochise type.

The material recorded from this group of sites seems to correspond very favorably with the San Pedro stage of the Cochise culture (which in Arizona has been dated approximately 3000 to 500 B.C.), a period characterized by percussion-flaked chipped implements, but with the addition of a few pressure-flaked artifacts—particularly projectile points.

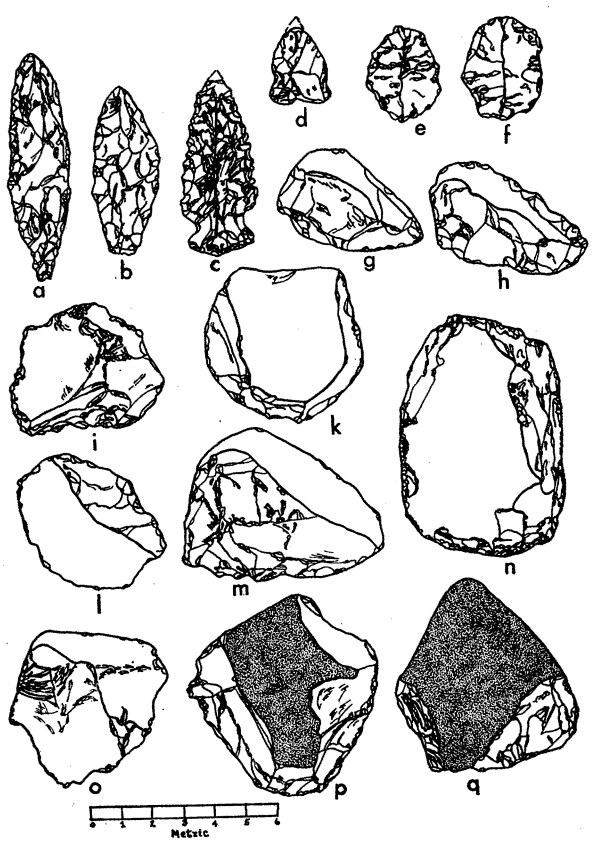

Fig. 1. Artifacts from the "Peralta" Cochise, Sonora: *a*, *b*, knife blades; *c*, *d*, projectile points; *e*, *f*, flake end scrapers; *g*, *h*, crude knife blades; *i*, *k*, plano-convex side scrapers; *m*, blunted side scraper; *l*, *o*, single flakes; *n*, side scraper-cutting edge; *p*, *q*, cobble end choppers.

This Sonoran manifestation very probably represents a local variation of an ancient cultural horizon of the Southwestern desert area. The material briefly described here has been designated tentatively as the "Peralta culture," possibly a Sonoran variant of the Arizona Cochise.

The artifacts will be deposited with the Biblioteca y Museo de Sonora in Hermosillo when the study is completed. This field survey was originally contracted with the Instituto Nacional de Antropologia e Historia of Mexico City, and was financed in part by the American Philosophical Society of Philadelphia (Penrose Fund) and the Kansas Academy of Science. Bill Young, of Springfield, Massachusetts, served in the capacity of field assistant.

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13 January 1955.

Selective Service Policy and Scientific Manpower

I am writing this note to my colleagues in scientific work in the United States because I have learned from conversations with members of the United States Congress that in general the members of the Congress have not been made aware of the critical nature of the current problem concerning recruitment, education, and utilization of specialized manpower in this country. It has become apparent that if the selective service legislation for the next 2 years is to recognize in a realistic way the long-term interests of the community in developing and utilizing specialized manpower, particularly in the sciences, the members of the Congress must receive more information from their constituents.

The American scientific community has an obligation to the public to call forcefully to the attention of the Congress the real hazard involved in our current policies. Existing general selective service and doctors' draft policies and practices are a serious threat to the future security and welfare of the country. Under present circumstances too few young men of ability are entering training programs in the fundamental sciences.

The present laws expire soon, and the Congress is now considering the terms of new acts to be in force for the next 2 years. This is therefore the time for scientists who have the interests of the country at heart to give their advice to their senators and representatives. Loyalty involves action as well as acquiescence. Democracy cannot work unless citizens participate in the processes of government; one of the essentials of participation is the sharing of information concerning problems of public policy with public officials. Some scientists, and other citizens, pretend to a virtuous obliviousness to public questions. They seem to enjoy a make-believe escape into an imaginary ivory tower of detachment that does not and cannot

really exist today. The scientist is, in spite of himself, involved in public questions simply because science today so largely determines the issues of peace or war, prosperity or poverty, and health or disease.

The traditional reluctance of scientists to become involved in any issues irrelevant to their own work does not apply in the case at issue. The present issues are not irrelevant to the contribution of their work to the public good. Therefore, it is to be hoped that large numbers of scientists will make their views known to their own congressmen and senators and to the Armed Services Committee of the Senate and the Military Affairs Committee of the House of Representatives.

A constructive proposal that could be made to these committees is that a special national scientific manpower service board might be set up within the Selective Service System which would implement policy under the general directives of the Act of the Congress and would serve as a uniform national appeal board. The Act of the Congress should direct Selective Service to provide mechanisms for serving the long-term interests of the country with respect to scientific manpower, in view of the self-evident fact that we are in a situation of long-term, as well as short-term, crisis.

The Congress must be informed by knowledgeable persons if it is to act wisely. Scientists are obviously in the informed segment of the population with regards to scientific manpower problems. It is time for them to speak as individuals, as well as through organizations, because individuals vote and because widespread individual attention to a problem indicates real interest and concern.

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28 March 1955

New Apparatus for Prolonged Constant Infusion in the Unrestrained Animal

During the course of studies on the role of various hormones in the regulation of carbohydrate metabolism, it became necessary to perfuse the unanesthetized, unrestrained dog continuously and intravenously for periods of 1 to 3 mo. Current methods (*1*) involve the use of expensive perfusion pumps, which function satisfactorily for short periods of time but may not be adequate for prolonged continuous use.

The purpose of this communication is to describe an inexpensive, simplified infusion apparatus, recently devised in this laboratory, that does not require a pump and contains a minimum number of moving parts.

The apparatus consists of an infusion reservoir, an electronic resistance relay, a stainless steel solenoid valve, a control reservoir, and a micrometer valve (Fig. 1). The infusion reservoir consists of a series of standard infusion bottles (Abbott). These bottles supply the control reservoir through a stainless steel solenoid valve (General Controls K-21 F) with plastic fittings for tube adaptation. The level of the fluid in the control reservoir is maintained constant (2-mm variation) by two control electrodes (glass with platinum tip) that actuate the electronic resistance relay controlling the solenoid valve. The relay is commercially available (General Electric, Photoswitch, and others) or can be constructed from a variety of standard circuit diagrams (*2*). Beyond the control reservoir is a micrometer valve (Norgren) that regulates the infusion rate. Tygon tubing is used throughout, and the portion that is accessible to the animal is protected by BX armor. A glass blower's swivel is used to permit unlimited movement of the animal in the cage without twisting the tubing. The swivel is supported by a counterbalance weight so that no excess tubing is in the cage, regardless of the position of the animal. The entire apparatus costs about $70.

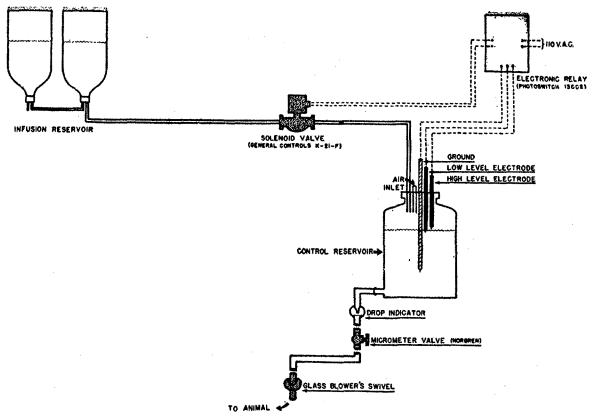

Fig. 1. Diagram of constant infusion apparatus.

This apparatus was successfully employed to perfuse the portal vein of an unanesthetized, unrestrained dog for 45 days. It is felt that the method has a variety of experimental applications.

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14 March 1955.

Calendar for Estimating Intervals in Days

Harris (*1*) has described a two-dimensional slide rule for the rapid calculation of time and other intervals. Table 1 shows, in a single chart, "days elapsed" and "days remaining" of the counting-house calendars commonly shown in diaries and desk calendars, together with multiples of 365. These data provide for the ready calculation of time intervals in days within