

VI. REFERENCES

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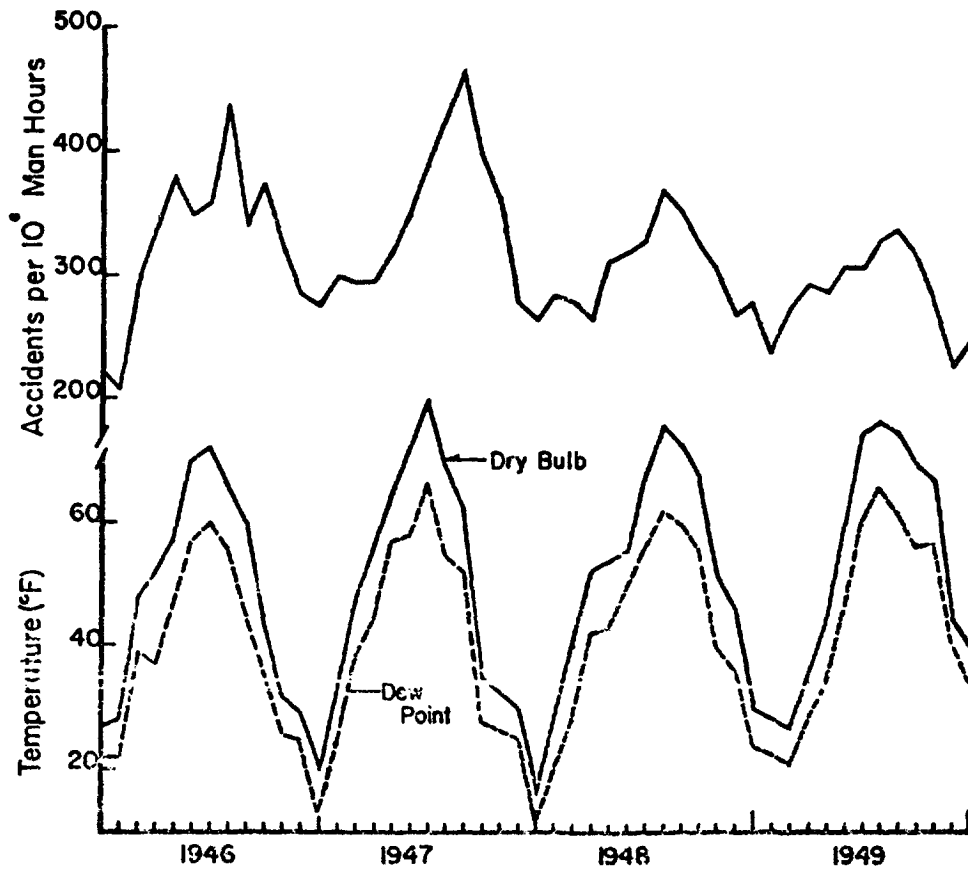


FIGURE 1. WEATHER AND ACCIDENT FREQUENCY IN A STEEL MILL. McMahon and Belding

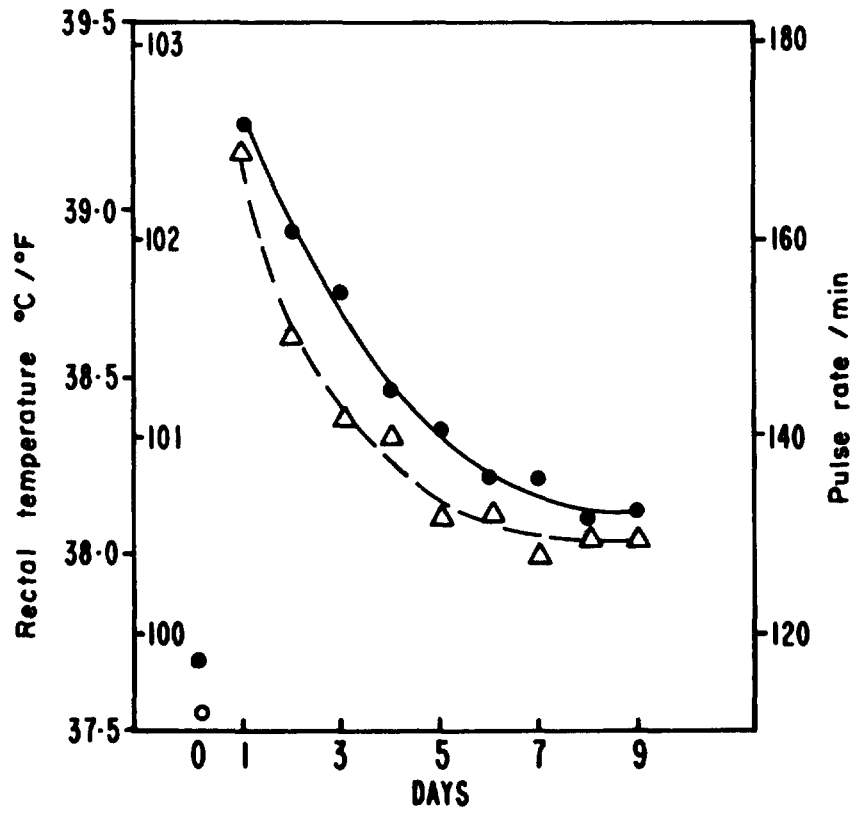


Fig. 2. Typical average rectal temperatures (●) ——— and pulse rates (△) - - - on successive days of exposure to heat and work .

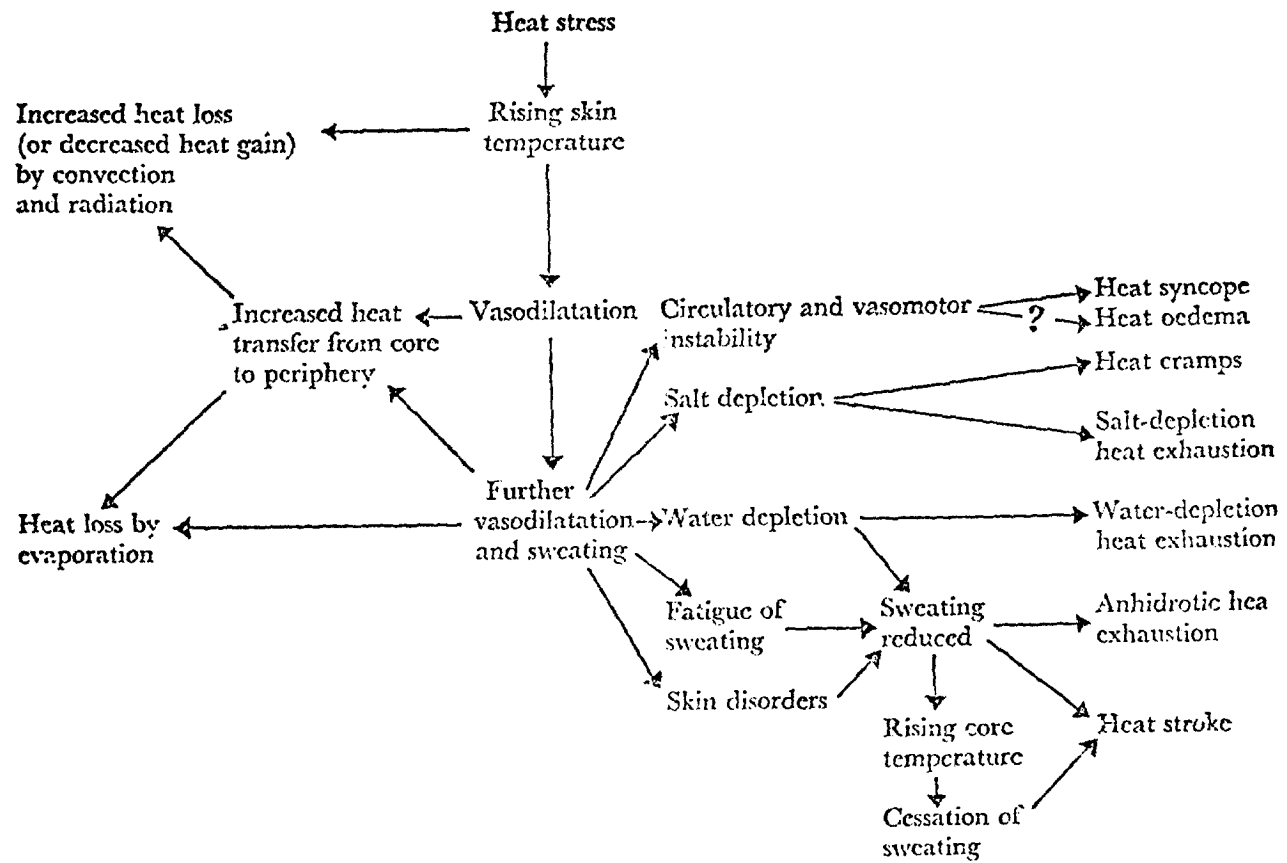


Figure 3. Heat Stress and Heat Disorders

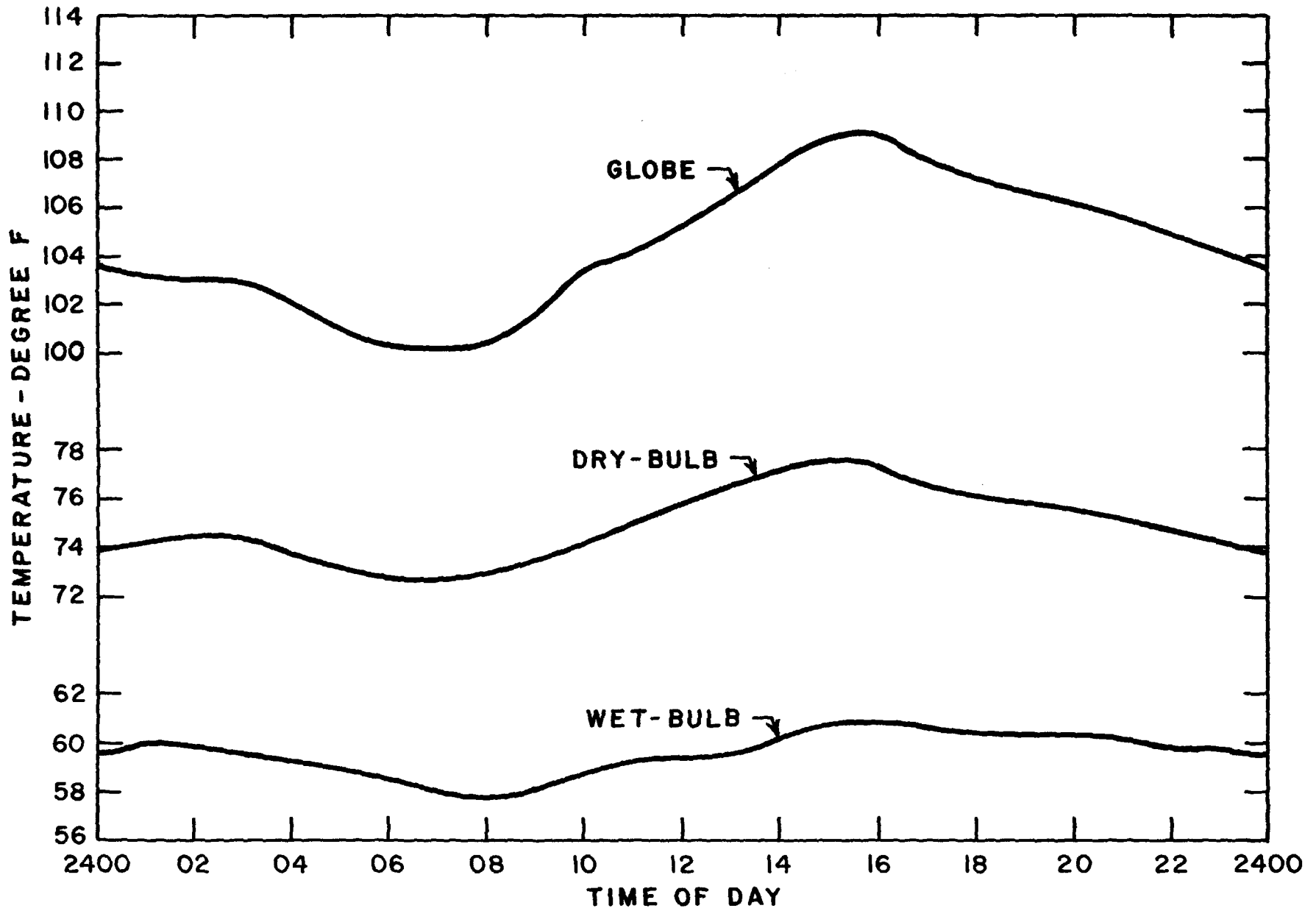


Fig. 4. Glass Plant - Average daily temperature cycles at points A₁ (December 3-19, 1963)

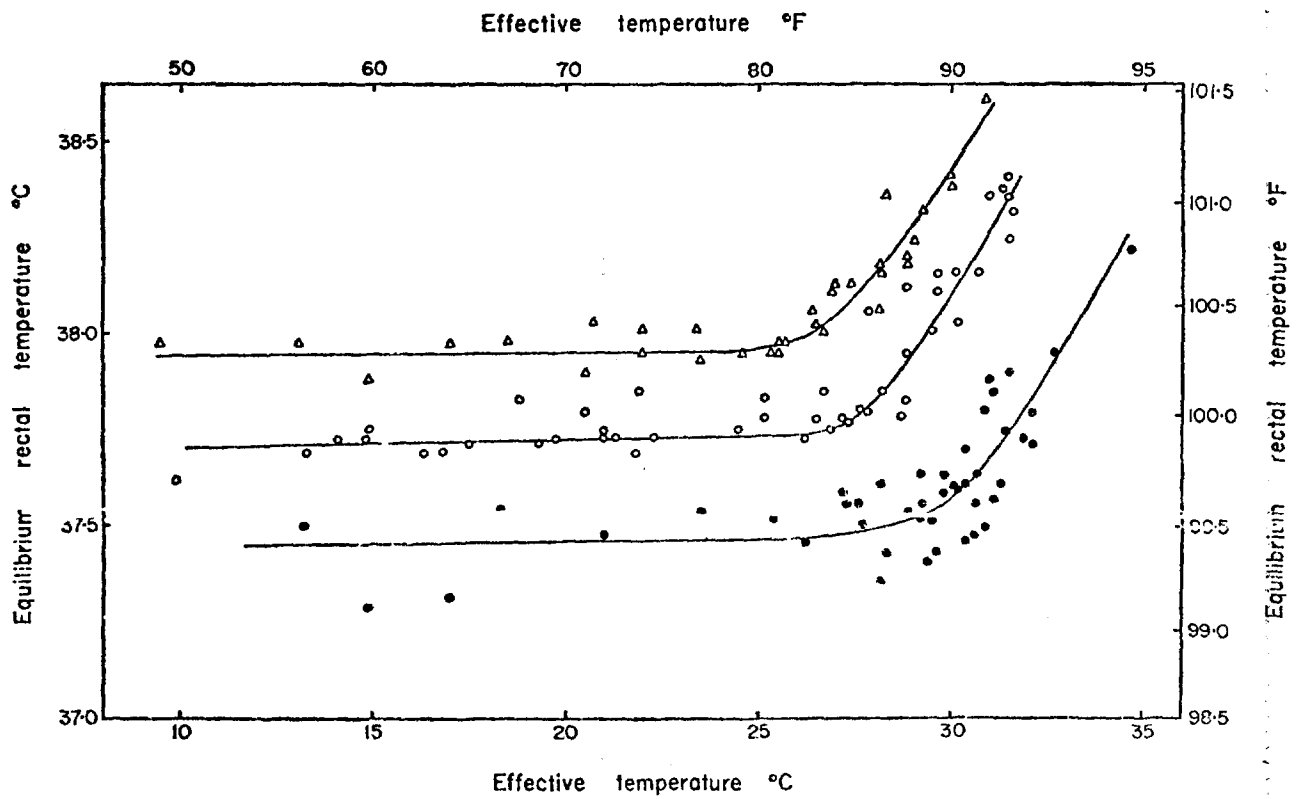


Fig. 5. —The levels of rectal temperature equilibrium of one subject working at 180 (●), 300 (○) and 420 (△) kcal./hr. in a wide range of climatic conditions.
(From: Lind (1963), *J. appl. Physiol.* 18, 51.)

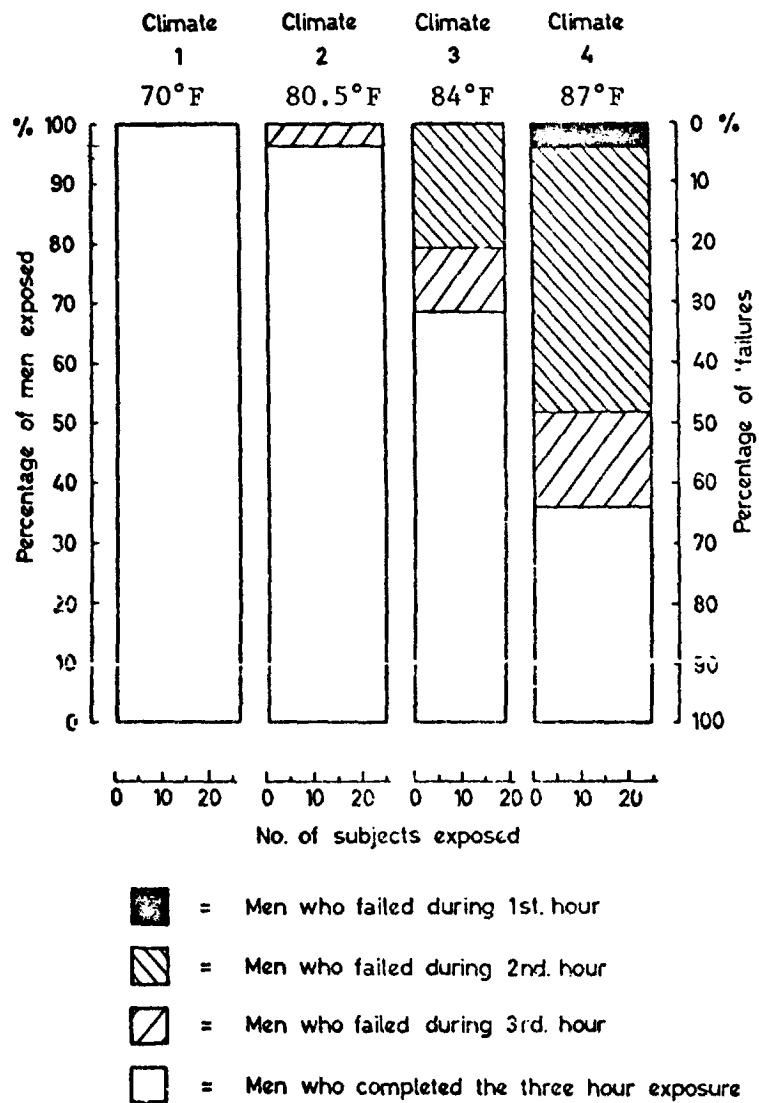


FIGURE 6

The numbers of men who reached a Deep body (rectal) temperature of 102.5°F and/or a pulse rate of 180 beats/min. while working at an energy expenditure of 300 kcal/hr. continuously for 3 hours in one of 4 different climates with Effective temperatures of 70, 80.5, 84 and 87, °F.

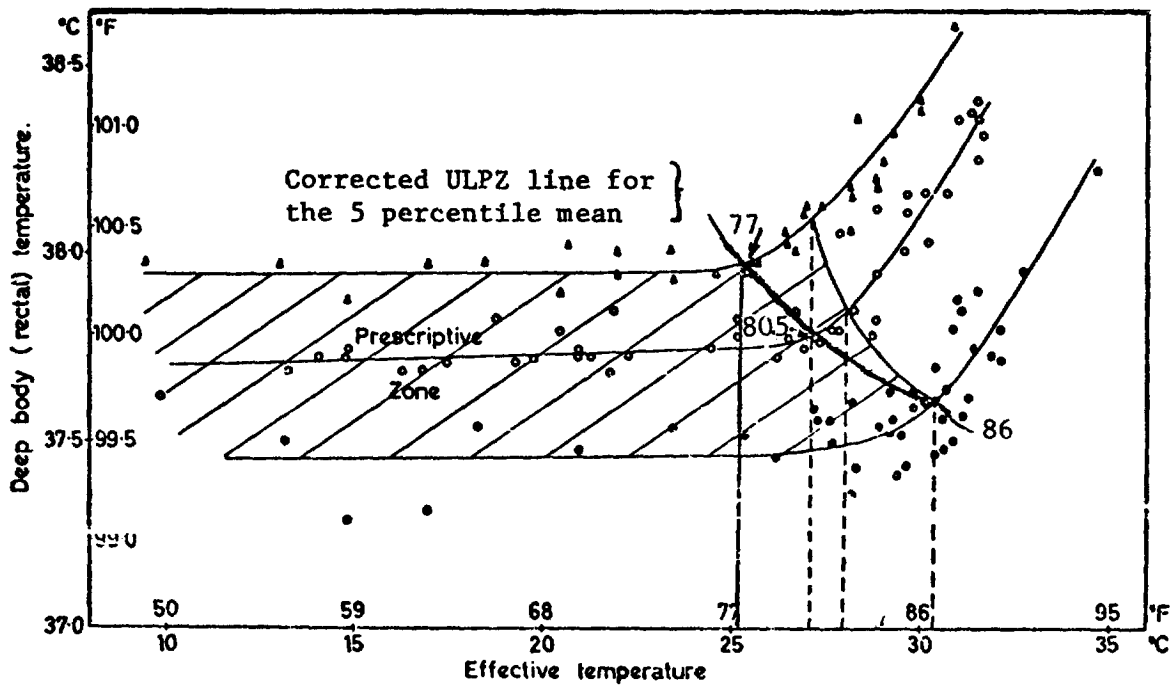


Figure 7. The deep body (rectal) temperatures of one subject working at energy expenditures of 180 (●), 300 (○) and 420 (▲), Kcal/hr, in a wide range of climatic conditions. (C.E.T.)

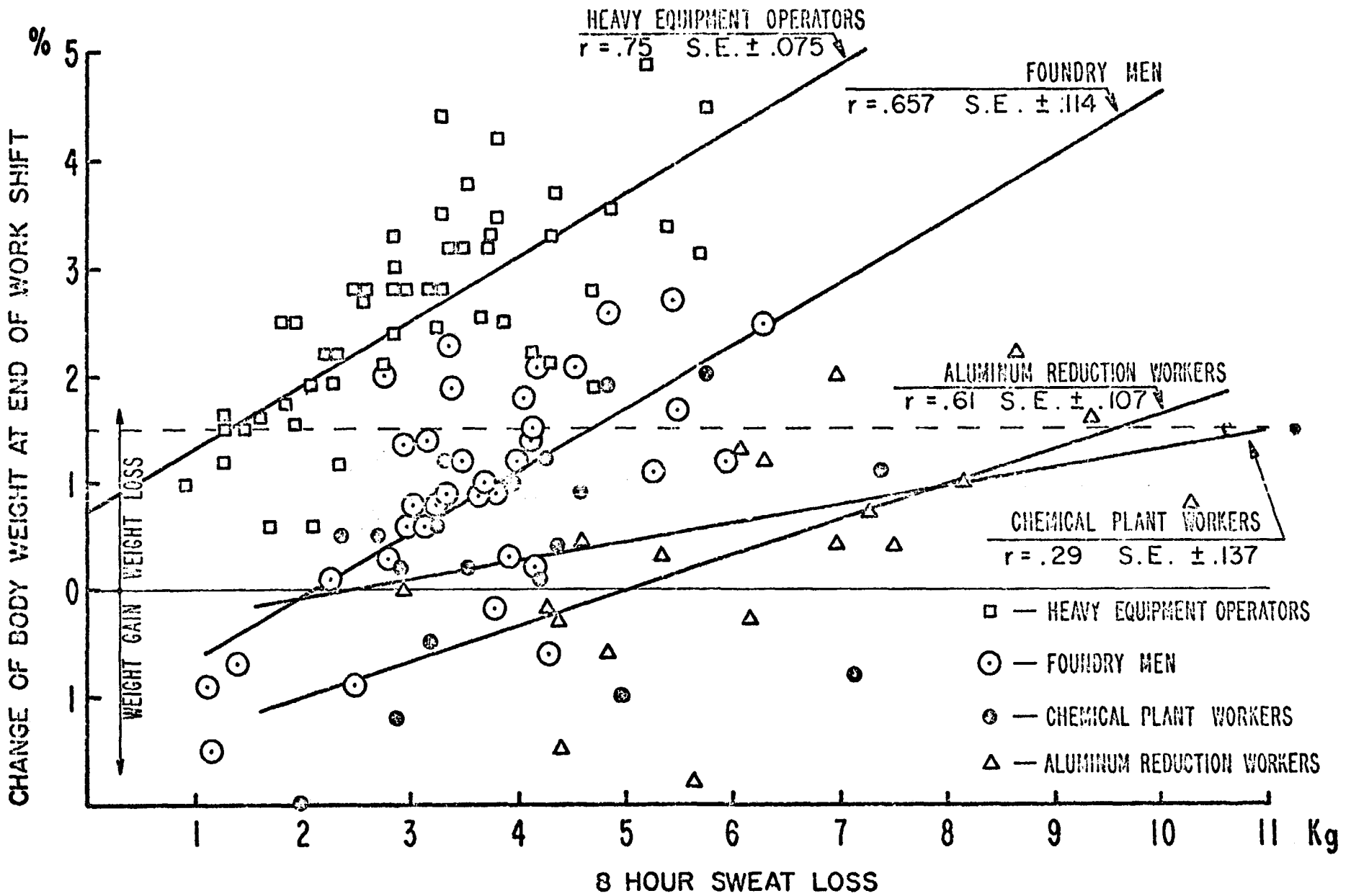


Figure 8.

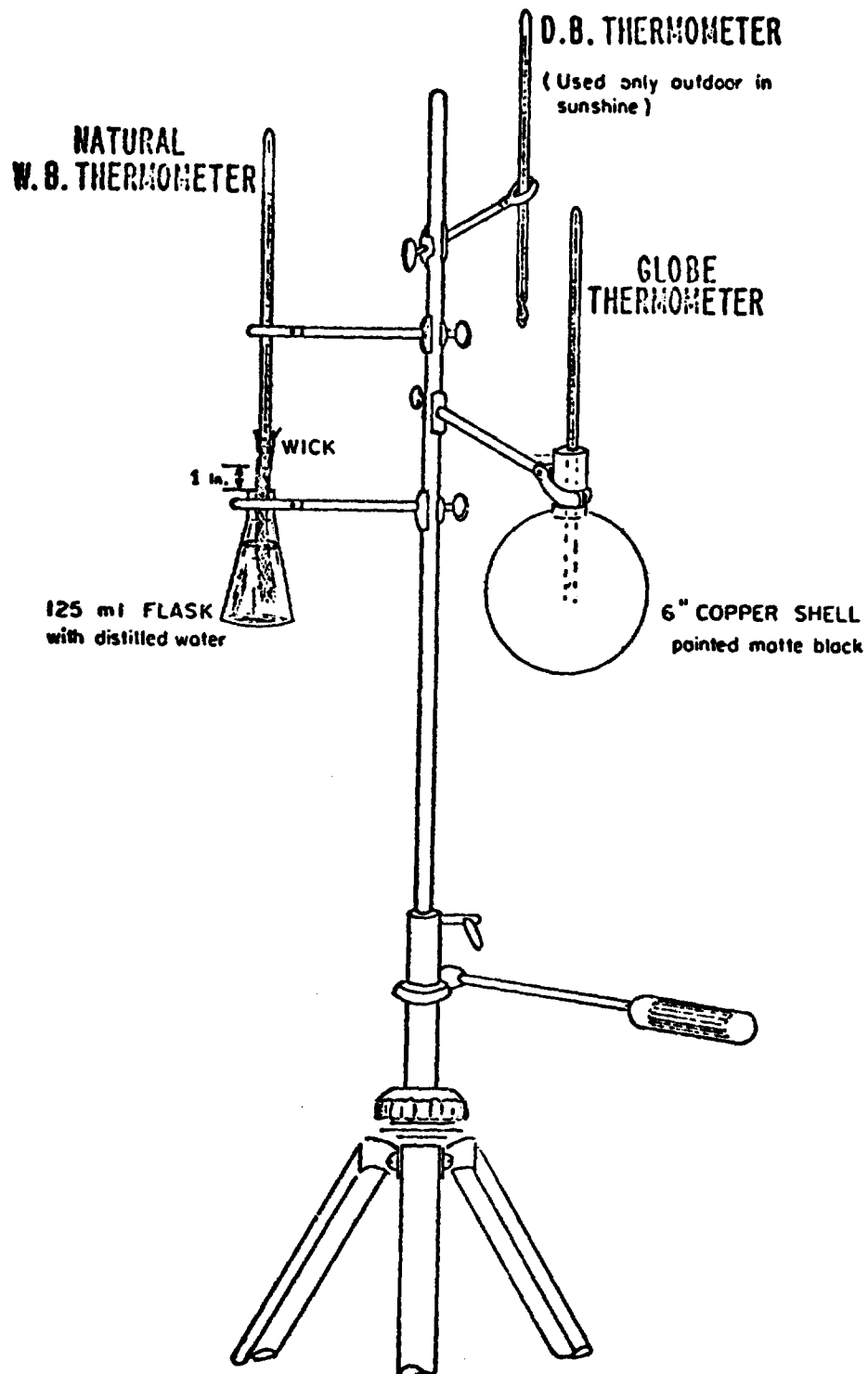
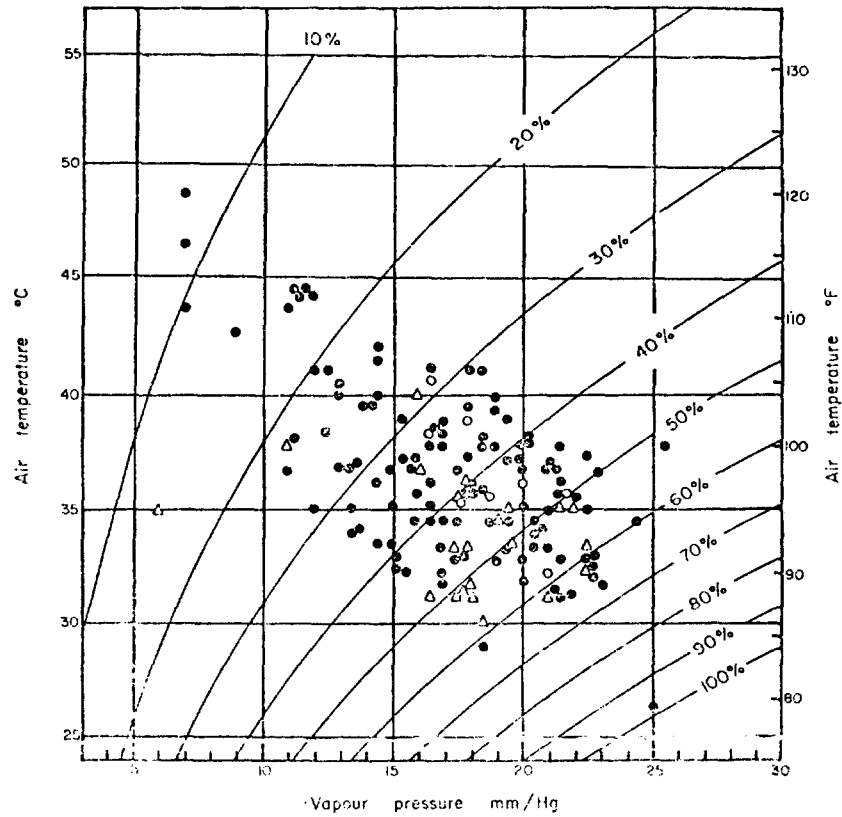


Figure 9. Suggested Instrument Arrangement for Environmental Measurements



- Δ Subject engaged in heavy exercise in sun, or had completed march of 15 to 25 miles during day.
- \bullet Subject engaged in average activity in sun, i.e. drill, guard duty, or relatively short march; activity not known in few cases.
- \circ Subject indoors during day.
- % Relative humidity.

Fig. 10. Humidity and maximum temperature (at nearest weather station) on days of onset of cases of fatal heatstroke in U.S. Army, 1942-44.
 (From: Shickele, E. (1947), Environment and Fatal Heat Stroke, *Milit.Surg.*, 100, 235.)

TABLE I

Factors Important in Determining Exposure-Effects Relationships

<u>Environmental Factors</u>	<u>Human Factors</u>	<u>Job Factors</u>
Temperature	Age	Complexity of Task
Humidity	Sex	Duration of Task
Wind	Physical Fitness	Physical Load
Long Wave Radiation	Body Build	Mental Load
Solar Radiation	Health	Perceptual-motor Load
Dust	Acclimatization	Sensorimotor Load
Aerosols	Nutrition & Hydration	Skill Required
Gases	Motivation	
Fumes	Training	
Barometric Pressure	Physical Capabilities	
Clothing	Mental Capabilities	
	Emotional Stability	
	Ethnic Characteristics	