

(3) The radio-technical guidance equipment, utilizing active radio signal transmission and return, including its elements, location and characteristics.

(4) Lighting equipment for rendezvous and docking, its elements, relative location and characteristics.

(5) Benchmarks and reference marks for orientation during rendezvous and docking, their location and characteristics.

(6) Coordinate systems for reference in developing rendezvous and docking techniques for spacecraft and space stations.

(7) The docking assembly, inner tunnel and electrical, pneumatic and hydraulic couplings.

(8) Pneumatic, hydraulic and electrical couplings and connectors between space suits and on-board equipment of the spacecraft or stations and their characteristics, the dimensions of hatches and the means of opening them from the outside (in the event that assistance needs to be rendered from the outside).

(9) Composition and characteristics of the cabin atmosphere.

(10) Voice and code communications between spacecraft.

(11) Dynamics of docking and the stabilization of system after docking.

(12) Constraints on the location of thrusters, solar batteries and other design elements which should be borne in mind to assure the possibility of docking.

The agreement goes on to list the next steps to be taken. During November of this year there was to be an exchange of technical details on radio guidance and rendezvous systems, on the composition and characteristics of the spacecraft atmospheres, and the voice communication systems. Then each side is to prepare its own draft of the technical requirements for the systems for which it considers it advisable to ensure compatibility, to be exchanged in January or February next year. This will be followed by a meeting in March or April to discuss and refine the technical requirements that have been put forward, and the agreement allows for an earlier preliminary meeting to prepare the ground. Once agreement has been reached each side, independently, will work out preliminary designs which will then be put to the representatives of each side who will decide what further work is to be done.

Does this mean then that the future Apollo astronauts will enjoy an extra lifeline not available to their predecessors? Unfortunately not. The Apollo programme is almost certainly too unchangeable to make the changes now. The same goes, of course, for the next step by the Americans, the Skylab programme which is still based on Apollo technology. What was being talked about at Moscow then was the compatibility of docking systems in programmes which in the United States have not yet received the go-ahead, the shuttle and the space station. A start has been made nevertheless.

## LEAD POISONING

### Children at Risk

from our New York Correspondent

LEAD poisoning is one of the most important paediatric problems in New York City according to Dr Vincent F. Guinee, director of the City Health Department's Bureau of Lead Poisoning Control. Speaking at the

New York Academy of Sciences last week, Dr Guinee estimated that between 6,000 and 8,000 children in the city have significant levels of lead in their blood. The number of deaths due to lead poisoning has dropped sharply because of improved testing, and is down to two so far this year, but for the same reason the number of known non-fatal cases has risen from 151 in 1959 to nearly 2,500 in 1970.

The chipping paint in older apartments is the primary source of lead poisoning. Paint with a high content of lead was banned in 1959, but Dr Guinee estimated that there are 450,000 apartment units in New York in such bad repair that children could easily eat leaded paint chips. Twelve per cent of the ingested lead is absorbed into the blood, with high enough levels causing irreparable brain damage.

The Bureau of Lead Poisoning has for the past year been seeking out cases, screening more children and attempting to provide preventive care. Dr Guinee hopes that each hospital and clinic will soon automatically include lead-poison screening in its testing facilities. The bureau itself screened more than 79,000 children last year to find the 2,500 with at least 60 micrograms of lead in their blood, the definition of a positive case. The apartments of all positive cases are tested by the bureau; if any painted wall contains more than one per cent lead, the area must be repaired and repainted, either by the landlord or by the bureau at the landlord's expense. Unfortunately, with only 200 workers and a budget of \$2.4 million, the bureau cannot begin to test the apartments of those 31,000 children who, when tested, had positive amounts of lead in their blood, not to mention the other 400,000-odd apartments that are probably contaminated.

According to Dr Guinee, the bureau's work during the past year has taught the researchers that (i) results vary greatly according to the depth of the sample; the more children who are screened, the more cases of lead poisoning that will be discovered. (ii) Study in this field has been hampered by semantics—what determines a "case"; where should the cut-off point be? And (iii) there is still a great lack of knowledge—how does a child react to his condition? Is there any psychological damage? Which children can receive treatment and what is a satisfactory or realistic end-point? Also, how is a health hazard measured and how efficiently can the law be enforced?

Lead poisoning is obviously an environmental problem, directly related to deteriorating housing. The obvious answer is to improve the housing, but this takes time and money. Workers in the field see the necessity for enacting stiffer laws and for educating the federal government, but fear that the problem will continue to grow not only as investigation improves, but while more housing is allowed to deteriorate.

But it seems possible that in this field, too, those involved are no longer going to sit back and wait for a change. One of the doctors at the meeting, Dr Rothschild of the Sloan-Kettering Institute for Cancer Research, stated: "What is lacking is that having identified the vector, we throw up our hands and go on treating the symptoms without trying to do anything about the environmental problem that causes it". Dr Rothschild went on to raise the possibility of becoming directly involved in social action. The meeting was receptive to the idea, if not prepared to act on it immediately, a hopeful sign at least for change in the future.