Summaries

CASTEJON, O. J. **"Chemical fixation of tissues for electron microscopy. A review".** Invest. Clín. Nº 22: 11-44. 1967.

1.— Three types of chemical fixatives for electron microscopy have been studied: osmium tetroxide, aldehydes and permanganate fixatives.

2.— A general review of literature dealing with the mode of fixative application, the fixation chemistry and the submicroscopic features of the tissue fixed by these chemical fixatives has been made.

3.— Unsaturated fats reduce osmium tetroxide with the formation of black compounds containing osmium or its hydroxide. Osmium tetroxide may be used as primary fixative or as a post-fixative in the tissue primarily fixed by aldehydes. Osmium tetroxide fixation depends upon the buffer solution, fixative concentration, pH, osmolarity and specific ions utilized.

4.— Aldehydes react with proteins. The most important reaction is probably the formation of methylene bridges which cross-link polipeptides at reactive side groups. Aldehydes preserve tissue fine structure and enzimatic activity. There are advantages using aldehydes as primary fixatives, for these can be relied upon to penetrate through tissue much more effectively than osmium tetroxide and they easily can be perfused. The morphological features of aldehyde fixation such as the visualization of cromatin clumps in most nuclei and the denser structural contents of cellular structure, have not been observed in the osmium tetroxide fixation alone.

5.— Permanganate fixatives are particularly used for the demonstration of cell membranes. The mechanism of permanganate fixation has not been characterized. The ultrastructural features of permanganate fixation depend, to a large degree, of the permanganate salt utilized and on the duration of fixation.

ARGUELLO, F.; MARTINEZ, H.; VILLALOBOS, H. **"Primordial dwarfism associated with corporal congenital asymmetry".** Invest. Clín. Nº 22: 45-58. 1967.

The authors present a case of primordial dwarfism associated with corporal congenital asymmetry which is consistent with the diagnosis of Silver-Russell syndrome. Besides the classic anthropometric patterns, other special measurements were taken in order to compare

them with future similar cases. A detailed radiologic study is shown. The chromosomal complement found in peripheral blood agrees with those reported by other authors.

TORRES VERA, M. T.; GARCIA TAMAYO, F.; LEON LUZARDO, M. **"Acute congenital myeloid leukemia".** Invest. Clín. Nº 22: 59-74. 1967.

The present case report concerns a female newborn who had since birth all the clinical signs which are considered characteristic in congenital leukemia. The patient lived one and half months and during the clinical course the disease showed recurrent episodes of multifocal infections. Finally she died with a typical picture of septicemia, including perforation of large bowel with peritonitis. In addition to the clinical findings, the large number of myeloblasts in peripheral blood and the parenchymatosus organs and a positive peroxidase reaction, made diagnosis of acute congenital myeloid leukemia more reliable.

Carefull review of the literature confirms rarity of this disease in the neonatal period, specially inmediate following birth. Twenty-one cases had been reported until 1959. Comments on etiology and a review of numerous and interesting studies are presented and brought up to date. This is with most probability the first case of congenital leukemia reported in Venezuela and the second in the Latin American literature.

ALLIENDE, C. **"Influence of different chemical fixatives on the isoelectric point determination in normal human skin".** Invest. Clin. Nº 22: 75-98. 1967.

We have performed a histochemical study on some normal human skin regions. For that purpose we have applied the acid and basic stain under controlled pH techniques. One of the most relevant observations obtained from this technique is the determination of the apparent isoelectric point.

It is very important to study this subject (phi) in function of several chemical fixatives influences. In such manner we can observe that the position of the isoelectric point is modified in different grades by several fixatives. Formalin and Zenker without acid fixations under 10%, displaces the apparent isoelectric point to a more acidic zone, due to the fact that such fixations block the protein-amino groups. Alcohol would produce a minor displacement because it does not bind itself to any of the protein functional groups. On the contrary, picro-formol-alcohol fixative displaces the isoelectric point to the least acid side, and up to the alcaline zone in certain epidermal structures, due to a carboxyl group blockade by picric acid.

The fixation also influences tissue affinity for stains. We have observed that formalin diminishes the union (compact) capacity for acid stains. Zenker increases tissue basophilia. Alcohol favors the union with both stains, and picro-formol-

alcohol exacerbates acidophilia.

The staining technique under controlled pH allowed us to stablish the extintion values with methylene blue. By such procedure we were able to determine, differentially, whether in the protein substances nucleoproteins and mucopolysaccharides were present.

"Es importantísimo que nuestros países se convenzan de que son capaces de contribuir a la ciencia creadora original, con un vigor igual al de los países más desarrollados. Esto no sucederá mientras sigamos desaprobando la ciencia fundamental en nuestro medio".

Marcel Roche
"Bitácora-63"

"Si el país no ve la posibilidad de cubrir directamente el costo de la investigación básica, debería estudiar la posibilidad de entrar en fondos comunes, como institutos regionales, en los cuales los científicos nacionales puedan florecer sin perder contacto con sus respectivas etnologías, y sin que se malogre la influencia de sus conocimientos y cultura sobre el desarrollo social de la comunidad a la cual pertenecen".

"El científico es un individuo que no puede dejar de preocuparse por los problemas de su país, que pertenece a un partido político si cree que en esa forma puede ayudar a mejorar esos problemas, que puede tomar, si las circunstancias lo requieren, una actitud frente a un gobierno, pero que sabe olvidarse de la política cuando hace su oficio de científico".

Marcel Roche
"Bitácora-63"