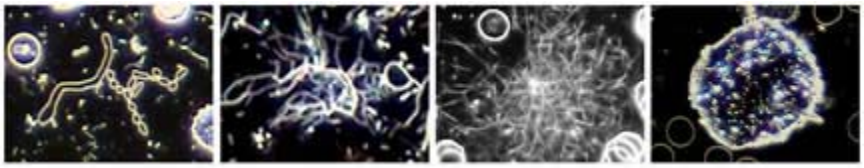
Understanding Forms Observed in Live Blood

Since the beginning of the 20th Century, a number of researchers have attempted to describe and interpret the wide variety of complex forms that frequently emerge in live blood. These structures are not the familiar "formed elements" of the blood, that is, the erythrocytes (red corpuscles), leukocytes (white cells), and thrombocytes (platelets), but a veritable bestiary of elements that are either not visible with most standard imaging techniques, or are routinely dismissed as accidental artifacts of no significance.

Among these forms, which are easily observed with a research grade darkfield microscope, are:

- Spherical, tubular, and branched membrane-bound structures ranging from a fraction of a micron in length to 50 microns or more
- Linear, articulated, radial, branched, and networked webs of flexible, filamentous strands
- A wide variety of crystalline forms ranging from simple reflective masses to highly structured, fern like fields with a strikingly fractal appearance
- Massive conglomerations of various characteristic shapes, textures, and colors

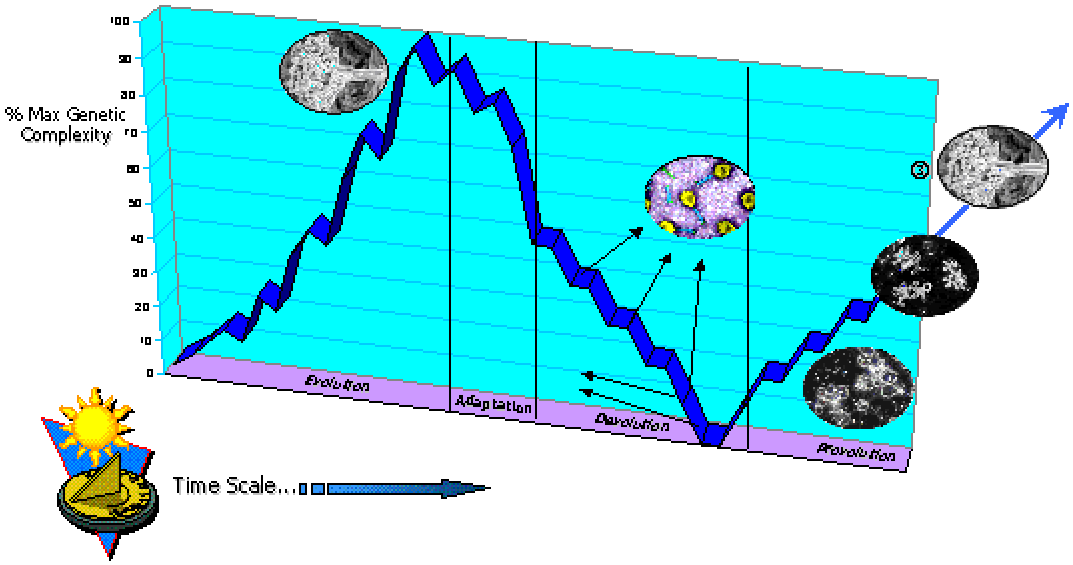
The following illustrations are typical examples of these forms, although there are literally hundreds of significant variations that are easily and routinely observed.



What is most interesting about these elements is that we can watch them form and subsequently make morphological transitions in extremely consistent ways – either spontaneously, or in reaction to specific types of *in vitro* challenges. For example, there is a rigid, butterfly shaped crystalline plate that can frequently be seen collapsing into a cluster of flexible strands anchored to a common center. If we put aside for a moment the question of what these form actually *are*, it is none-the-less possible to correlate their presence and transformational patterns with particular clinical conditions, making them useful as indicators for specific therapeutic options. This is the field of classical darkfield blood analysis and it is also the starting point for a more advanced and precise analytical technique called DIAD Microscopy (DIAD stands for Differential Isopathic Assessment in Darkfield).

At some point, however, the temptation to explore the nature of the objects themselves becomes compelling. Dr. Günther Enderlein (1872 – 1968) developed a comprehensive theory of bacterial and fungal pleomorphism and considered some of the forms he observed in the blood to be living bacteria and mold fungi. However, Enderlein's theories are difficult to reconcile with contemporary biological knowledge, and parts of his opus appear frankly naïve and outdated.

In response, I have proposed a theory speculating that bacterial and fungal pleomorphism may be the result of a set of evolutionary ecological dynamics, and have hypothesized a novel explanation for the phenomena which I call "provolution." The *Theory of Ambimorphic Provolution* (see contact information below to request a paper on the subject) suggests that some independently evolved microorganisms undergo a profound process of *devolution* within a lineage of host organisms – such as the mammalian line from which humans evolved. At some later time, responding to triggers within the host's internal ecological system, a number of these devolved elements may recombine to produce active biological structures. I use



the term provolution to describe this process of "un-devolving." It is not necessary that the provolved entities exactly match the devolved organisms from which they were derived. They need only have morphological similarity to act as indicators of a clinically significant process.

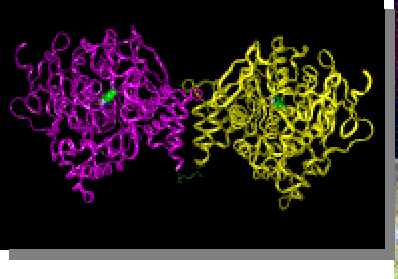
The idea of a three phase system – independent *evolution* of a microorganism in the wild, its subsequent *devolution* within an evolutionary line of hosts, and finally, *provolution* of the devolved elements to reconstruct a semblance of the original organism – may or may not be correct. However, as a *functional theory*, that is, a set of assumptions and their empirically observable consequences, it matches reality quite closely – albeit a reality that few contemporary researchers have spent time observing. In Chinese Medicine, for example, a diagnosis of "hot wind in the head" is clinically consistent and therapeutically meaningful, even though we know that there are no hot air masses moving inside the cranium. DIAD Microscopy - the form of clinical analysis based in part on the theory of provolution – works extremely well, whether or not the explanations I offer are on target.

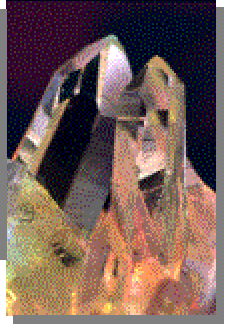
For some time, I have suggested that many of the forms that emerge in the blood are probably not, as Enderlein thought, actually living fungi or bacteria, but rather, morphologically parallel structures that form from the precise *reorganization* of elements already present in the body. Clinically, I have proceeded from the assumption that when structures aggressively emerge in the blood that have the appearance of fungal hyphæ, this presentation suggests a mycophilic terrain – that is, a set of conditions within the body that are conducive to the growth and development of actual mold fungi.

In these subjects, living fungi may in fact be found in the mouth and gums, intestines, or other places favorable to their mycotic growth. On the other hand, the tendency for fungal provolution may exist in the absence of fungal overgrowth, as natural systems of the body work to effectively suppress their emergence. Even without the appearance of actual pleomorphic fungi or bacteria, this scenario still suggests health consequences arising from sustained high levels of immune activity, including the potential for hyper-reactive or autoimmune conditions, and correspondingly high levels of oxidative stress. These reactions can, in turn, result in adverse chronic health conditions as diverse as impaired enzyme systems and degraded neural polarity. Chronic fatigue and depression are two possible "macroscopic" consequences.

Whether or not the provolutionary theory is correct, clinical treatment proceeding from these assumptions have been remarkably effective. DIAD Microscopy adds another layer of accuracy to classical darkfield analysis, providing detailed information about the species of fungal and bacterial influences to be down-regulated.

The notion that we can infer useful information from parallel morphologies is not without precedent. For thousands of years, systems of traditional medicine have relied on clues such as those provided by the Doctrine of Signatures to infer and extrapolate the healing qualities of plants and other substances. The following quote is from an article about the Doctrine of Signatures by Douglas Hoff:





The Doctrine of Signatures is a very old notion which predates homeopathy and was already mentioned in the writings of the Swiss physician Paracelsus von Hohenheim (1493-1541). It proposes the idea that God gave everything in nature its unique healing powers and left a clue for us to discover in the appearance of each plant or substance. For example, the dark lines on the petals of Digitalis purpurea are reminiscent of blood vessels. Indeed, Digitalis is a well-known allopathic drug for heart problems and also has an affinity for this organ in its homeopathic preparation. Similarly, the yellow juice of Chelidonium majus reminds one of the yellowish complexion typical of patients with liver problems. Chelidonium is known for its affinity to the liver.

It is hard to imagine that in our current day and age, anyone would seriously propose that the Doctrine of Signatures is a complete or universally valid foundation for healing. However, the *outer* resemblance of a living thing to the *inner* workings of another living thing may not always be a coincidence. To explore this notion, let's start with something simpler than a living organism, namely, a quartz crystal.

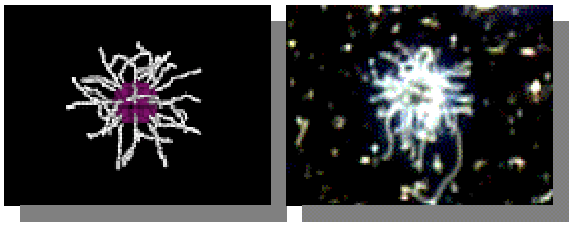
A quartz crystal is formed when countless molecules of silicon dioxide are allowed to slowly bind together in a highly regular fashion. Within the Earth, this usually happens over a period of thousands, or even millions of years, as hot, mineral rich ground water percolates into underground gaps and slowly cools out of solution. Each silicon dioxide molecule has an "electromagnetic shape," that is, a pattern of attractions and repulsions that make a kind of invisible "jigsaw puzzle pattern" in space. Under the right conditions, a neighboring molecule can snugly fit into the field created by the surrounding molecules, and in turn, creates a new layer of the 3D jigsaw puzzle. When this process is allowed to proceed in an organized fashion, the outer, macroscopic form of the crystal becomes a perfect reflection of the inner, microscopic field of each molecule.

Similarly, proteins, the fundamental building blocks of living things, are molecules whose behaviors are governed largely by their shapes. An antibody is a protein which has been genetically engineered within a lymphocyte to slip over the corresponding projections of an antigen, binding to it and interfering with its pathogenic action. An anabolic enzyme is often a protein that creates two or more "sockets" which cause other molecules to precisely align so that they can chemically react and form a new substance. Frequently, these "sockets" are folded into an inactive form until a modulating co-factor, such as a metallic ion, locks into the enzyme and converts its shape into an active form. When the enabling co-factor is removed, the enzyme reverts into its previous, non-reactive shape. For example, the enzyme carbonic anhydrase causes carbon dioxide in our blood to combine with water to make carbonic acid – but it only does so when it is activated by the presence of a zinc ion. Without the zinc, the shape of the enzyme is not conducive to the reaction.

Now, if a mineral crystal can create a macroscopic form from the precise interactions of trillions upon trillions of molecules, it is not so much of a stretch to imagine that proteins and other richly structured biological elements can produce larger forms that in some respect echo the morphologies of their components. It has recently been suggested that when Dr. Enderlein believed that he saw fungus emerging from human blood, this was only a coincidence – that he was actually seeing meaningless artifacts that accidentally resembled the mold fungi *Mucor racemosus* and *Aspergillus niger*. But in the light of the preceding examples, is it not possible that what Enderlein actually saw was a form made up, at least in part, of some of the same, morphologically textured elements involved in the biology of the real fungi? Indeed, when Schmidt, Enderlein, and others made preparations from these fungi, isolating specific components from true fungal cultures, the resulting substances turned out to have profound healing properties, including a corresponding, measurable reduction in fungal infection. Could this entire chain all be mere coincidence?

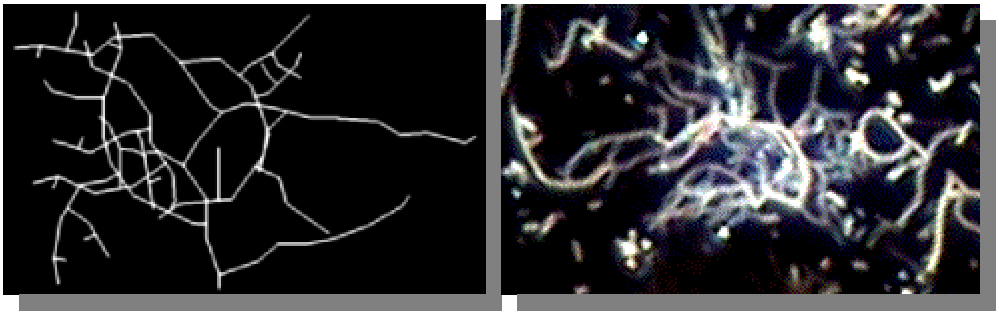
To further explore these ideas, I would like to compare a series of computer generated images of simulated fungal growth with actual images of emergent blood elements, captured with DIAD Microscopy. The computer images were produced as examples of a Lindenmayer System – a particular type of mathematical

fractal originally developed to model dynamic growth processes in multi-cellular biological systems. I find the correlations with actual blood forms to be striking.



The first example, at left, shows a Lindenmayer simulation of multi-spore growth from a common center (http://mvc.man.ac.uk/research/fungi/fungi.html). Compare this with a DIAD Microscopy image of "fungus-like" growth from a highly disturbed Red Blood Corpuscle (right). Having observed thousands of similar forms in numerous intermediate states, both in the plain blood, and in response to specific biological challenges (via the DIAD method), I find it impossible to believe that the resemblance is coincidental.

The second example compares a Lindenmayer simulation of the branching hyphæ of the mold strain Mucor M41 on the left (http://ironbark.bendigo.latrobe.edu.au/staff/fran/lsys/filament.html) to a common type of networked web structure that often arises in the blood of individuals with fungal infections and other chronic health complaints (right) .



Again, the similarities are striking, as they are in hundreds of other images I have captured over the years using my DIAD method. Indeed, there is nothing quite so irksome as being told that thousands of carefully correlated observations are nothing more than coincidence…by someone who has not made a single, comparable observation.

In light of these consistent morphological similarities, and in the light of the fact that isopathic remedies prepared from actual mold fungi promote healing – including the profound reduction of fungal disease and influence in the body – and in light of the fact that decaying mammalian tissues becomes overrun with *exactly these same mold fungi* – I find it impossible to believe that the pleomorphic observations of Béchamp, Bernard, Ahlmquist, Schmidt, Enderlein, Rife, Livingston-Wheeler and numerous others can simply be dismissed as coincidence! Indeed, Ahlmquist, commenting on the incredible complexity and diversity of pleomorphic microbial transformation said, "No one can hope to know all the possible variations of even a single bacterial species. It would be a presumption to think so."

Indeed, the theories proposed early in the 20th Century by Enderlein (*Bacterial Cyclogeny*, Berlin, 1925) are in need of major revision. I have offered a number of creative hypotheses in my *Theory of Pleomorphic Provolution*, which suggests that the forms we see emerging in the blood represent the re-organization of elements contributed by previously devolved microorganisms. I propose an ecological evolutionary model for how and why such un-devolutions (which I give the more elegant name "provolution") would occur, and relate them to teleologically directed, adaptation seeking mechanisms beneficial to several layers of ecological intelligence. Whether that work is in any way correct remains to be seen, but I offer it, at the

very least, as a creative attempt to reconcile 150 years of empirical pleomorphic observation with the rigors of modern cellular, molecular, and genetic biology.

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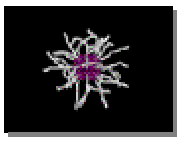
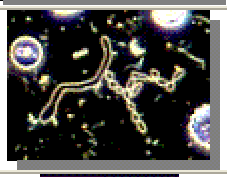
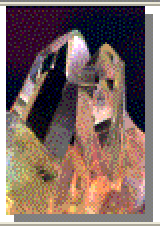
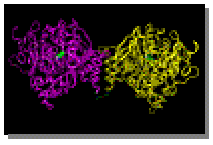
	Multi-spore Lindenmayer image from H S Chan & Dr C Webb Dept of Chemical Engineering, University of Manchester, England http://mvc.man.ac.uk/research/fungi/fungi.html
	Filamentous image of Mucor M41 from Dr. Fran Soddell, Latrobe University, Bendingo, Australia http://ironbark.bendigo.latrobe.edu.au/staff/fran/lsys/filament.html
	Darkfield images produced by Stuart Grace, via DIAD Microscopy From the HemoDex Image Catalog, Copyright © 1996 - 2002
	Quartz crystal image courtesy of Jay Phillip Schomer http://www.halcyon.com/nemain/gallery/Quartz_46.html
	Computer simulated image of enzyme binding from the National Coordination Office for Information Technology Research and Development http://www.hpcc.gov/pubs/blue98/hecc_supp.html